

# PULP & PAPER

*"The Cellulose Age"*

## EDITORIALS

**"A business is only as good and sound as the manpower which operates the equipment and which follows through in every other direction to complete satisfaction of the customer."**  
—Ernst Mahler, executive vice president, Kimberly-Clark Corp.

### What Is Waste in the Forests?

Contrary to a widely accepted theory, vast areas of timber in Colorado, Montana, and other mountain states that have never been cut, do not represent conservation of our national resources. Rather they represent a waste. From the Forest Service's report, we learn that in Colorado alone there are six billions of board feet of Englemann's spruce that have died in just a few recent years. Timber becomes overripe and unfit for commercial use, then it falls prey to insect and they spread to infect healthy trees.

### Wage Increases are Not General

While many other industries and other industrial unions have not put into effect any further wage increases this year, there have been substantial increases in the pulp and paper industry sections of North America. The pattern set in this industry has been for smaller increases than in past years, but there have been many increases, which is more than can be said of a great many other industries.

The pulp and paper mills of the United States have now achieved an average wage which is substantially higher than the average wage for all other industries in this country. This is a point which is not as widely known in this industry as it should be. The story of how this has happened was told in **PULP & PAPER'S** North American Review Number of 1948, which was recently published.

### What the World Needs

The Pope Celestine VI, according to his published letters, wrote to the monks and brothers as follows:

"The world today is succumbing to an infinite and insidious disease. Among the graver symptoms is the luxuriant growth and invasion of the pseudo-wise, of the half-wise, of those with certificates, diplomas, licenses, degrees, the paper-scratchers and pen-pushers. There is a dangerous flood of manuscripts and publications. If man does not perish in an avalanche of fire, he will surely drown in a flood of ink. There is a great deal more need now for strong laborers, industrious workmen, decent artisans, reclaimers and healers of souls, angels in human form; in short, saints, rather than examiners and examined, professors, and bachelors of art. Instead of reading so many books, it would be very much better to know how to read men's souls so as to be able to give them that inner peace without which world peace will be forever impossible."

These passages may serve as sound advice in this day and age, too.

AUGUST	1948	No. 9	The Production and Management Journal Covering North America's Wood Pulp, Paper, Paperboard and Cellulose Industries
Vol. 22			by MILLER FREEMAN-PUBLICATIONS, INC.
Member Audit Bureau of Circulations			NARD JONES.....Associate Editor
Contents copyrighted, 1948			WILLIAM J. KREBS.....Associate Editor
MILLER FREEMAN.....President			CHARLES L. SHAW.....Canadian Editorial Director
LAWRENCE K. SMITH.....Manager			W. E. CROSBY.....Forestry Editor
ALBERT WILSON.....Editor			MILLER FREEMAN, JR.....Circulation Manager
LUCILE AYERS.....Assistant Editor			
PRINCIPAL OFFICES—370 Lexington Ave., New York 17, N. Y. (120 E. 41st), Murray Hill 3-9295 (M. F. Bosworth, Business Representative: Virginia Meenagh, Readers and Adv. Service); 305 Baronne St., New Orleans 12, La., Phone—Magnolia 4800; 675 W. Hastings St., Vancouver, B. C., Phone—Marine 1520. Publishing Office—71 Columbia St., Seattle 4, Wash. Phone—Main 1626.			
OTHER OFFICES—Louis Blackerby, 534 S. W. 3rd Av., Portland 4, Ore.; Tel. Be. 6348—Stuart Leete, 121 2nd St., San Francisco 5, Calif.; Tel. Ga. 1-5887—Arthur Pensford, 124 W. 4th St., Los Angeles 13, Calif., Tel. Mu. 8194.			
SUBSCRIPTION inc. North American Review Number—\$3 for 1 yr. and \$5 for 2 yrs. in U. S., Canada, Mexico and other member nations of Pan-American Union (\$4 for 1 yr. and \$7 for 2 yrs. in other countries).			

### If Trees Stay, Unsightly Signs Should Go

The St. Helens Pulp & Paper Co., St. Helens, Ore., recently announced through its president, Max Oberdorfer, a commendable public-spirited policy regarding the treatment of company lands along public highways.

St. Helens has expressed a determination to "retain the younger and immature growth" for "a suitable attractive vista or background" and under some conditions to "leave a fringe which would enhance the beauty of the country through which the highway passes."

The company added, that after it has made expenditures to promote a sustained yield forestry program, it has the "right to demand that billboards, roadside hamburger stands, beer joints and other unsightly blots should not nullify its efforts to leave for public enjoyment the beauties of nature which Oregon so generously offers to the traveler."

To this, we respond: "Hear! Hear!"

### Jobs for Alaska Indians

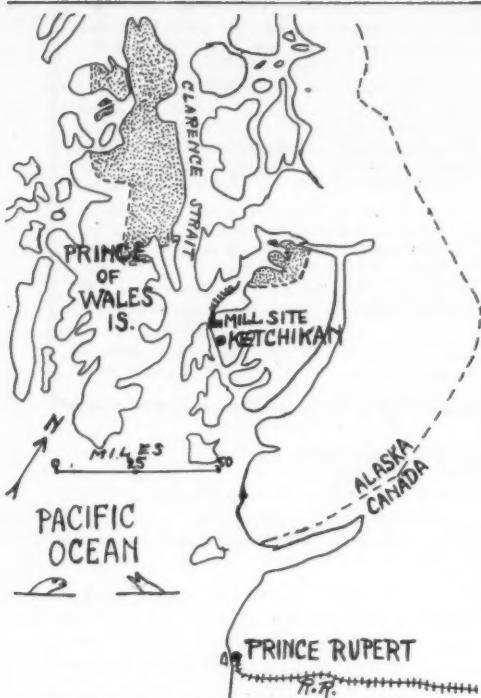
News Item—A half-million-dollar fish cannery at Hydaburg, Alaska, burns. Cannery was only payroll for the village's 250 Indians.

Hydaburg is on the Prince of Wales Island and these Indians can have permanent, not seasonal, jobs if, and when, the sale of the pulpwood timber unit on that island is consummated and a pulp mill built. Hydaburg is one of the villages whose professed lobbyist friends in Washington have contributed to the delay in building of a mill by counter-claims to the timber.

### In This Issue—

CALENDAR OF MEETINGS	26	Armbruster Dies.....	27
INTERNATIONAL PAPER COMPANY'S JUBILEE	28	Swedish Export "Tax".....	33
HAMMERMILL'S NO. 7	40	Otto Kress Honored.....	33
FERNSTROM KEEPS PACE WITH CALIFORNIA	48	Mexico Makes Rayon.....	34
GREEN BAY MEETING	58	"Ag" Hansen Dies.....	35
SOUTHLAND EXPANSION	70	Crossett Expansion.....	38
PERSONAL NEWS —		15% Straw in News.....	39
Middle West.....	35	Lignin Meetings.....	44
Northeast.....	36	World Pulp Market.....	60
Pacific Coast.....	37	Wage Incentives.....	62
South.....	38	Watervliet Paper Co.....	68
Canada.....	39	Columbia Flood Loss.....	84
Alaska Mill Bid.....	26	PASC Prize Paper.....	86
Paper's Importance.....	27	Infra Red Drying.....	89
		PULPWOOD SECTION—	
		Southern Meeting.....	78
		Wood Use in B. C. ....	82

See Page 26 for Description of Our Cover Picture



THIS MAP SHOWS PULP MILL SITE IN ALASKA on which Ketchikan Pulp & Timber Co., headed by Lawson Turcotte, Executive Vice President of Puget Sound Pulp & Timber Co., has exercised option. It is at Ward's Cove, six miles north of Ketchikan. Both Ketchikan and Ward's Cove are on Revillagigedo Island, where there are four tentatively selected power sites with capacities ranging up to 25,000 hp.

Shaded areas on Prince of Wales Island and Revil-

## OPTION ON ALASKA MILL

### At last, a Bid is Expected Aug. 2

Ketchikan Pulp & Timber Co., headed by Lawson T. Turcotte, president, announces that it has exercised its option on a site for a \$15,000,000 sulfite pulp mill at Ward's Cove, six miles north of Ketchikan, Alaska.

This development came as the U. S. Forest Service made an announcement on June 14 that it was again offering 1½ billion cu. ft. of timber in the Ketchikan area to the highest qualified bidder at an auction sale set for August 2 in the South Agriculture Bldg., Washington, D. C. The Service had previously announced it contemplated no further offerings after three previous auction sales had failed to produce bidders.

Qualifications to bid for this timber had to be filed before July 19 with the Chief of the U. S. Forest Service. Qualifications include experience in pulp or paper manufacturing, knowledge of Alaska's resources and conditions, evidence of sufficient financial resources for preliminary surveys and designs, and \$25,000. Another \$75,000 deposit must be made by the successful bidder, plus evidence that a fund of at least \$8,000,000 will be available for construction of a mill.

The timber, about 75% hemlock and 25% spruce, is mostly in the northern half of Prince of Wales Island, across Clarence Strait and northwest of Ketchikan, and in a smaller northwest portion of Revillagigedo Island, north of Ketchikan. There are five power sites, all undeveloped, on the latter island ranging from 24,600 hp. potential capacity down to 6,500 hp.

Mr. Turcotte is also executive vice president of Puget Sound Pulp & Timber Co., Bellingham, Wash. He said there is no assurance as yet that the plant will be built but "progress is being made."

Jagigedo Island and a few smaller islands have been set aside by U. S. Forest Service for timber auction sale on August 2 which, it is calculated, would support unbleached sulfite pulp mill of 300 to 525 tons capacity. Forest Service agrees to provide more timber if needed.

Canadian National railroad at Prince Rupert, B. C., is the nearest railhead. Mill site is 600 miles from Bellingham, Wash., site of Puget Sound Pulp & Timber

Co. On island near Prince Rupert, Celanese Corp. of America is building new bleached sulfite pulp mill.

### A Description of Our Cover Picture—



This is a new air view of Fernstrom Paper Mills of Pomona, Calif., taken especially for PULP & PAPER and showing the new No. 3 Mill (large building at right). New machine and other equipment in this building are described in an article beginning on page 48.

The main Union Pacific and Southern Pacific railroad lines pass the mill at bottom of our cover picture. In the distant background, beyond the big orange grove on the left, and the walnut grove on the right, is U. S. Highway No. 99—the same road the Spaniards of old took to California from Gulf of Mexico. More orange groves can be seen at top of picture.

The mill offices are facing a little grove in the lower left corner of the mill grounds. The steam plant is to the right of this grove. No. 1 and No. 2 machines are housed in buildings along the railroad. The converting plant is in left upper area of mill grounds and shipping dock is at left. Baled pulp, which is shipped in, can be seen—stored in open in this sunny climate—in the foreground just to left of new No. 3 Mill.

Effluent from this mill is welcomed by the ranchers and provides both irrigation and humus for surrounding fruit and nut groves. Surrounding this mill is one of the greatest and richest orange belts in the world.

### COMING INDUSTRY MEETINGS

First Western Packaging Exposition—Civic Auditorium, San Francisco..... Aug. 10-13

Lignin Round Table—  
Institute of Paper Chemistry, Appleton, Wis. .... Aug. 12-14

Pacific Coast TAPPI Lignin Seminars—U. of Wash., Seattle ..... Aug. 30-31  
Multnomah Hotel, Portland, Ore., Sept. 2-3

TAPPI Plastics Conference—  
Institute of Paper Chemistry, Appleton, Wis. .... Aug. 16-17

TAPPI Fundamental Research—  
On "Physical Constituents of Wood," Madison, Wis. .... Aug. 18-20

Technical Section Canadian Assn.—  
Vancouver Hotel, Vancouver, B.C. .... Sept. 8-9-10

American Chemical Society's National Convention (Lignin and Wood Products Symposiums) —  
Portland, Ore. .... Sept. 13-16

Northeastern Wood Utilization Council—Boston ..... Sept. 17

TAPPI (U. S.) and Canadian Tech. Section, Mechanical Pulping—Po-  
land Springs, Maine.... Sept. 27-29

New England Materials Handling Exposition—Mechanics Hall, Bos-  
ton ..... Oct. 5-7

TAPPI Testing Conference—  
Mellon Institute, Pittsburgh, Pa. .... Oct. 11-13

Southern and Southeastern Supts.  
Divisions Joint Meeting—Atlanta  
Biltmore Hotel, Atlanta, Ga. .... Oct. 21-23

TAPPI Engineering Conference—  
Statler Hotel, Buffalo, N. Y. .... Oct. 25-28

National Paper Trade Assn.—  
Hotel Stevens, Chicago. Oct. 28-30

Forest Products Research Society,  
Pacific Northwest Section—Hotel  
Vancouver, Vancouver, B. C. .... Nov. 8-9

American Paper & Pulp Assn.—  
Waldorf-Astoria, New York. .... Feb. 20-24, 1949

National TAPPI Convention—  
Commodore Hotel, New York. .... Feb. 21-24, 1949

National TAPPI Coating Conven-  
tion—Grand Rapids, Mich. .... Apr. 26-28, 1949

National TAPPI Fall Meeting—  
Multnomah Hotel, Portland, Ore. .... Sept. 12-16, 1949

Paper Industry Salesmen—  
Midtown House, New York City—  
Every Monday, 12 noon to 2 p.m.

Allied Industries Luncheon Club—  
Second Monday of month, 12 noon,  
Commodore Hotel, New York.

# IMPORTANCE OF PAPER

## In North America's Economy

Once again the importance of the paper industry in the economic life of the North American continent is recognized by a great company outside of this industry. Not long ago we quoted the financial report of a big insurance company which revealed its major investments were being made in the paper industry. Now comes a stockholder's report by Westinghouse Electric Corp., and virtually the entire report is devoted to the importance of the paper industry. In fact, the report is titled "Paper."

Commenting on this unusual Westinghouse report, D. Clark Everest, president and general manager of Marathon Corp., wrote the editor of **PULP & PAPER**, as follows:

"I have always been a bit disturbed about the failure of financial writers and economists to give 'Paper' the position it deserves in the economic set-up of the North American continent. While it occupies either the sixth or seventh place in our national economy, no one seems to pay much attention to it, except in some occasional study or general interest article.

"A good pitcher with the Cincinnati Reds, or some other team, gets infinitely more attention from sports writers and statisticians, and they are only writing about some guy who one day 'has his seat on the throne' and the next day may be 'thrown on his seat.'

"One of the presidents of one of the great leading industries of this country recognizes 'Paper' and its importance to his business and the national economy.

"I am enclosing the recent issue of Westinghouse Stockholders' Quarterly. I just wanted you to know that one of our great industries does recognize the importance and stability of the paper industry. Westinghouse doesn't bother with a product development program which has no long time future application.

"Yours very truly,  
MARATHON CORPORATION  
D. C. EVEREST,  
President and General Manager."

### No. 1 Industry in Power Product Ratio

As we stated above, nearly the entire stockholders' report from Westinghouse was devoted to the pulp and paper industry. It pointed out that this industry is:

First—among all industries—in power used per ton of product;

Third—among all industries—in total installed kilowatt generating power;

Fourth—among all industries—in annual consumption of electricity.

Here is what the report says, over the name of Gwilym A. Price, the president of Westinghouse Electric Corp.

"Paper has been called the springboard



THESE MEN COMMENT ON IMPORTANCE OF PAPER INDUSTRY—

**GWILYMY A. PRICE** (left), President of Westinghouse Electric Corp.: "The paper industry ranks first in power used per ton of product—third in total installed kilowatt generating power—fourth in annual consumption of electricity."

**D. CLARK EVEREST** (right), President of Marathon Corp., former President of American Paper and Pulp Assn.: "I have always been a bit disturbed about the failure of financial writers to give 'paper' the position it deserves."

to modern civilization; the pacemaker of progress. It is indispensable to human advancement.

Everyone in this country uses an average of one pound of paper every day. Paper is made into such things as building materials and dish cloths, containers, water-proof maps, newspapers and magazines and hundreds of other products.

"In 1947 the combination of electricity and modern machinery enabled the paper industry in this country to turn out a record volume of 21,029,000 tons of paper and paperboard, enough for a mile-wide highway linking the earth and the moon. This was an increase of 6% over 1946 and was 75% greater than the average for the years 1935-1939.

"This year paper production may reach 21,000,000 tons or even 23,000,000 tons. But still this would not satisfy the demand.

"Now paper is made by a precision machine in a continuous sheet up to 20 feet wide at speeds of nearly 2,000 feet a minute. Each machine forms, presses, dries and, where required, coats paper in one continuous operation. It represents an investment of well over one million dollars and its operation requires a crew of highly skilled workmen. Ordinarily the machine runs 24 hours a day, frequently seven days a week. It may be as high as a three-story house and long as a city block. It will have up to 30 electric motors, all of which must be exactly synchronized in speed.

"... the average paper mill workman has at his command 15 horsepower of mechanical and electrical energy, compared with a average of 7.2 horsepower for all manufacturing in this country.

"To make one ton of paper requires, in addition to pulp, water and chemicals, 700 kilowatt hours of electricity and 10,000 to 20,000 pounds of steam."

And there was much more about paper in the report. There were descriptions and photographs of all kinds of equipment supplied by Westinghouse to the paper industry—a 1,500-hp. motor to drive a big chipper which reduces a big 30-ft. log, 42 inches wide, to chips in 20-30 seconds; an electronic regulator for precise speed controls at a Pennsylvania mill; a big machine and a big supercalender being electrically driven. There was an illustrated flow sheet drawing of paper-making from tree to the paper roll. And Mr. Everest pointed out that many other electrical applications might have been mentioned which are used in printing and converting paper.

## G. J. ARMBRUSTER DIES

G. J. Armbruster, for many years an outstanding figure in both the eastern and far western sulfite pulp industries and for 16 years general superintendent of Soundview Pulp Co., biggest sulfite mill in the world, died July 3 at Everett, Wash. He was 67 years old and had been living in retirement about two years.

On June 20, he and his widow observed their 44th wedding anniversary, also the 13th wedding anniversary of their son, Fred, of Seattle, Pacific Northwest representative of Dow Chemical Co., and his wife.

Born in Stuttgart, Germany, March 8, 1881, the elder Mr. Armbruster came to the U. S. at the age of 9 and five years

later had a job in the pulp mill at Palmer, N. Y. He served in the Spanish American War while under age and rose to sergeant. At the age of 21, he returned to the industry in the Nekoosa, Wis., mill and was married there.

After working in Ohio, New York and West Virginia mills, he became superintendent in 1916 at Merriton, Ont., and held that rank until he retired. In 1921 he became sulfite superintendent at the Fraser Companies mill at Edmundston, New Brunswick, and was superintendent at the Restigouche mill at Atholville, N. B., 1929 to 1930, when he took over the general superintendency of the new big mill at Everett. He was made a life member of the superintendents association in 1943.

## COAST-TO-COAST REPORT

# International's Jubilee



OFFICERS OF INTERNATIONAL PAPER CO. (left to right): RICHARD J. CULLEN, Chairman of the Corporation; JOHN H. HINMAN, President; HARRISON WEAVER, First Vice President.

In June of this year 25 communities stirred to increased tempo to celebrate the 50th anniversary of International Paper Co. Some of the communities were hardly more than mill villages. Some were thriving towns and sizeable cities.

But all twenty-five of these communities had a common denominator—a direct stake in the fortunes of one of the great pulp and paper organizations of North America. For in each of these villages and towns and cities were one or more International mills. In the majority of them "IP" was the leading industry, and in some the only manufacturing industry.

Thus the half-century celebration of International was really on an international basis, spread wide in both the U. S. and Canada, and this was more literally true because the shareholders of a company like this one are spread even further. To cover such a celebration, which ranged from northern Canadian spruce forests to the pine woodlands of the south, and from the Atlantic seaboard to the Pacific Ocean, **PULP & PAPER** called on all its editorial offices. Personal contacts were made at many points, including Gatineau in Quebec, at Corinth and Ticonderoga in New York State, at Southern mills and at Los Angeles, site of I.P.'s most recently acquired converting plant, to bring readers of this magazine a real sense of being present at these celebrations.

The celebrations ranged from June 14th to 19th and during that period all mills were opened to the public as part of an employee and community relations program. There were "open house" celebrations which included banquets, luncheons, field days, picnics, and mill tours. Literally thousands of school children had their first glimpse of how pulp and paper is made and learned of its deep contribution to the national life of Canada and the

U. S. as well as to the world.

In the northeast International operates mills at Corinth, Ticonderoga, Tonawanda and North Tonawanda, N. Y.; in Otis and Livermore Falls, Me., and in York Haven, Pa. In the South there are eight mills in Louisiana, Arkansas, Mississippi, Alabama, Florida, and South Carolina. Corrugated container plants are operated in Chicago, Georgetown, Los Angeles, Kansas City, St. Louis, as well as in New Jersey, Louisiana, and Missouri. There are milk container plants in Louisiana, Pennsylvania, and Michigan, and a bag plant at Mobile. At Camden, Ark., and Bastrop, La., are two multiwall bag plants.

The Canadian International Paper Co. has mills or affiliates which produce newsprint, dissolving pulps, insulating board, Masonite hardboard, hardwood plywood and a number of end-products. In addition to all this, there are miscellaneous facilities like the International Envelope Corp., Dayton, O.; Arizona Chemical Co. (with American Cyanamid) in Texas, South Carolina, Florida, and Louisiana. In New York City a large part of the skyscraper at 220 East 42nd Street is occupied by headquarters and sales activities, while the Southern Kraft Division headquarters is at Mobile.

### What It Celebrated

International had plenty to celebrate in its 50th year. Its sales had risen from \$127,487,000 in 1937 to \$405,248,000 in 1947. Its income before taxes had almost doubled in 1948 over the previous year. Earned dividend per common share is \$15.02. And now more than \$6,000,000 has been set aside for improvement of six northern mills in Maine, Pennsylvania, and New York; and \$40,000,000 for eight mills and one converting plant in the South.

Announcement of the \$46,000,000 modernization program came as part of the anniversary celebration, direct from John H. Hinman, president of International, and J. H. Friend, vice president in charge of the Southern Kraft Division. The effect of the modernization program on employment was pointed out by Mr. Hinman: the six northern mills will pay a total of \$1,710,710 more this year than last, and while a part of the increase is due to wage increases, the modernization program gets ample credit.

Modernization at the various mills include the following: 1. Hudson River Mill, Corinth, N. Y.—continuous coating; new finishing room; additions to bleached sulfite operation; 2. Otis Mill, Chisholm, Me.—water filtration plant; additions to groundwood mill; new waste boiler; supercalender equipment; changes to paper machine and auxiliaries; 3. Niagara Falls Mill—new pulp storage building; overhead cranes and conveyors; new high pressure boiler; new hydropulpers; de-inking, washing and bleaching of waste papers; new pulp refining equipment; major changes in the fourdrinier machine; 4. Tonawanda, N. Y., Mill—recovery boiler; modern stoker boiler; quintuple-effect evaporators; new beaters, screens and pulp-handling equipment; new drives on paper machines; 5. York Haven Mill, York Haven, Pa.—new beaters and refiners; screens; new drives on machine; maintenance work deferred by war; 6. Bastrop and "Louisiana" Mills, both at Bastrop, La.—increased pulp and machine capacity raising tonnage from 270 to 330 tons; additional pulp capacity; new Fourdrinier; 7. Camden, Camden, Ark., Mill—additional pulp capacity, increased paper machine capacity; new power plant; 8. Georgetown, S. C., Mill—more machine capacity; 9. Panama City, Fla., Mill—additional pulp mill and machine capacity; 10. Springhill, La., Mill—additional kraft and bleached pulp capacity; enlarged bleach plant; new power plant; 11. Moss Point, Miss., Mill—minor improvements; 12. Mobile, Ala., Mill and Bag Plant—new continuous caustic system; additional power plant.

### What Happened at "Ti"

When **PULP & PAPER** reached the Ticonderoga mill the celebration had begun with a dinner for 25-year men on June 10th, but the open house opened officially on the 17th, beginning with a luncheon for officials. The general public was admitted to the mills on three days from 10 a.m. to 4 p.m. and the celebration wound up with a picnic and field day on Sunday, June 20th.

Ticonderoga was one of the many mills which had something special to celebrate due to modernization work. Visitors saw (Continued on page 30)

e

mod-  
of the  
John  
national,  
charge  
the ef-  
in em-  
Hin-  
pay a  
than  
ase is  
zation

ls in-  
er Mill,  
t new  
d sul-  
n, Me.  
as to  
; su-  
paper  
Falls  
over-  
high  
; de-  
waste  
ment;  
chine;  
boil-  
effect  
and  
es on  
York  
nners;  
inte-  
strop  
strop,  
acity  
; ad-  
nieri;  
tion-  
chine  
orge-  
acity;  
pulp  
ghill,  
ched  
new  
ill—  
Ala.,  
uous  
at.

the  
be-  
on  
d of  
h a  
public  
days  
ation  
y on  
nills  
rate  
saw

PER



MAJOR JOHN H. FRIEND, Vice President and Gen. Mgr. of the Southern Kraft Division of International Paper Co., is seen at the microphone in the top picture, taken by PULP & PAPER at the Mobile, Ala., anniversary celebration. He is welcoming guests to the Mobile mill.

AT LEFT (middle) is personnel of International's new Los Angeles converting plant, their farthest west unit. Left to right: STANLEY BAER, Manager; J. F. JOHNS, Superintendent; T. H. MERRIMAN, Office Manager; J. B. COX, Sales Coordinator, and MISS G. E. BRAYTON, Mr. Baer's Secretary. Middle, right: Guests passing by woodpile at Mobile, Ala., mill on the day of the celebration there.

SPEAKERS AT INTERNATIONAL'S field day at its Hudson River mill (lower, L. to R.): A. B. COPPING, Assistant Manager; W. D. MAXIM, Division Manager; VANCE EDWARDES, General Chairman of Celebration; O. B. BEYER, Mill Manager, and A. A. PRESTERA, Chairman of Entertainment.



LEADING THE ANNIVERSARY CELEBRATIONS OF INTERNATIONAL PAPER CO.'S NEW YORK MILLS (pictures by PULP & PAPER).

Leaders at the Ticonderoga Mills in New York are in top row, left to right: JAY LAWSON, Manager, Ticonderoga Mills; D. M. JONES, Mill Agent; JOHN DeVANEY, Committee Chairman; F. H. SAVAGE, Sales Manager, Book and Bond Div., and guest speaker at Ticonderoga banquet; L. G. THURSTON, Asst. Manager; R. E. CROCKETT, Asst. Plant Manager.

Bottom row, O. B. BEYER, Mill Manager at the Corinth, N. Y., Mill, explains proceedings to a lady visitor; Mr. Beyer can be seen again at the rear of the large group at right. He is facing the camera.

the new Babcock & Wilcox recovery system, the Allis-Chalmers stream-barker, the Cottrell electronic precipitator, the Dorr dregs washers and white and green liquor clarifiers, and the trio of new E. D. Jones & Sons Bertram beaters. There was a second-stage Impco washer, a Kidder press winder with Reliance Electric & Engineering Co. drive, and new Beloit drives on the paper machine.

The new six-ton digester allows Ticonderoga to bring in less pulp for paper specialties, and the new liquor-making equipment will take care of this additional pulp capacity. The three new high-pressure boilers have a capacity of 60,000 pounds of steam per hour, which with the new recovery boiler and a new 4,000 kw steam turbine, completely modernizes "Ti's" steam and power plant.

The pleasant little town of Ticonderoga, with its International clock tower at one end of the main street, and the "Upper Mill" at the other, was lively and agog with the meaning of the celebration.

Everywhere along the street and in the stores people were asking each other, "Have you seen the mill exhibits yet?" An important part of the celebrations was the part taken in them by mill management, as well as by employees.

Jay Lawson, manager of Ticonderoga Mills, was on hand to meet the visitors, as were David Jones, mill agent, Laurence

Thurston, assistant manager, all the superintendents, and many others.

#### A Big Day at Corinth-Palmer

And over at Hudson Mills, at Corinth, N. Y., Mill Manager O. B. Beyer was personally taking part in conducting groups through the mill, and Vance Edwards, sulfite superintendent and former national president of TAPPI, was searching for incoming celebrities to welcome them. The organization of the "biggest anniversary celebration in the U. S." was a thing of wonder to visitors. The towns of Corinth and Palmer both were lively with a sense of holiday—although the 31 mills in the 25 cities went right on producing through the celebration.

The Corinth party began with a picnic and field day and this was followed by "Open House" and a reception and dinner. Twenty-five year medallion recipients were honored at a dinner in the New Worden Hotel in Saratoga Springs on June 19th.

The awe-inspiring International exhibit was in some instances set up in the mills, as at Ticonderoga, and in some instances at a nearby company hall, as at Corinth. But the general theme and design was the same as that prepared for the anniversary dinner in New York City where topmost International executives spoke on the history and future aims of the company.

#### Los Angeles "Plant-Warming" For Enlarged Operations

International Paper Co.'s newest plant acquisition and its farthest west plant—a converting plant right in Los Angeles, now one of the world's great cities—seized upon the 50th anniversary date as an occasion for a "plant-warming" which PULP & PAPER attended.

It was a wonderful opportunity for the new manager, Stanley Baer, and his staff, to meet the paper trade and for the trade en masse to meet them.

When IPC took over the former Owens-Illinois corrugated box plant at 5120 Soto St., Los Angeles, in Dec., 1947, there were 29 employees in all. Now there are 115 in the plant and 18 more in the general offices. The plant has been greatly enlarged.

Mr. Baer was transferred to Los Angeles from Kansas City, where he had been since that plant was built in 1939. He was on the road for "IP" out of Kansas City until 1945; then was made assistant sales manager, and finally sales manager.

To Los Angeles with him came his secretary, Miss G. E. Brayton, and Walter O. Newstrom, chief salesman of the Los Angeles plant. Joining him was T. H. Merriman, office manager. J. F. Johns remained as plant superintendent after the plant was taken over, as did J. B. Cox as coordinator of sales.

When International took over the plant had a capacity of B and C flute of 400 to 500 tons per month, running one shift. Now, eight months later production is up to 1,000 tons, monthly, and if a third shift is put on, it can be stepped up to 1,500 to 1,800 tons.

New equipment includes a steam system on a 63-ft. corrugated machine to speed it up; a tape machine; two semi-automatic stitchers; eccentric slotted for large boxes, and an automatic partition assembling machine for glass. The whole plant was given a complete overhauling.

Mr. Baer said distribution at present was confined largely to Los Angeles and San Francisco areas, although other areas in California were being serviced as was possible. He declared International was now permanently located in the west and there would be expansion. Tentative future plans call for installation of an 85-foot machine and expansion of floor space.

#### JUBILEE IN THE SOUTH

International paper might be called a "southern" company if measured by the extent of its operations South, said Major J. H. Friend, corporation vice president and Southern Kraft Division general manager, in welcoming several hundred selected guests at the formal opening of the 50th anniversary celebration in Mobile, Ala., June 14. Maj. Friend's remarks pointed to the importance of production from the Division's big Southern mills.

It was in 1925 that International entered the South, acquiring the Bastrop Pulp and Paper Co., Bastrop, La., adding 50 tons daily of southern kraft paper to its over-all production. As of Jan. 1, 1948, this initial 50 tons had been expanded in eight mill in the South to 4,750 tons per day of which 3,200 was kraft liner and Chemfibre corrugating material for shipping containers, and 1,550 of kraft paper and bleached kraft grades. Total annual yield is approximately 1,600,000 tons. By the close of 1949, this will be stepped up to approximately 2,030,000 tons annually.

Of the total 430,000-ton annual increase in production to be realized from the eight Southern Kraft Division mills, 200,000 will come in 1948. The largest expansions are at Panama City, Fla., Bastrop

and Springhill, La., and Camden, Ark.

Headquarters of Southern Division are at Mobile, Ala., and the ceremonies were typical of those at the other Southern units. Here the guests assembled at a downtown hotel; were brought to the mill in chartered buses. A tour of the mill was along roped and marked channels, with frequent explanatory signs, and courteous employees stationed at every turn. At the tour's conclusion, the guests viewed an exhibit of 147 items either produced by the company or from its products by others. Chilled soft drinks were served.

Major Friend stressed the company as a "good citizen" rather than only a "good provider." Its role as good provider for Mobile was extolled by Mayor Charles A. Baumhauer. Division officials introduced at the meeting included Earl Porter, Divisional woodlands manager; Charles C. Jones, Divisional traffic manager; L. L. Lapeyrouse, Mobile mill manager; C. O. Bingham, agent for mill and bag plant; John St. Laurent, bag plant superintendent. T. M. Barbour, Mobile mill accountant, served as master of ceremonies.

Following the mill ceremonies, the guests were returned to the hotel where they were entertained with a cocktail party and buffet supper.

On the days following the formal opening of the Golden Jubilee, the mill kept open house for the visiting public, and for relatives of employees. The week was culminated with a picnic for employees at

which those of 25 years' service were presented with medallions.

The Mobile mill was built by International in 1928-29 and is now partially converted to produce bleached kraft wrapping and bag papers besides unbleached papers. It had been producing 400 tons daily and soon will attain 500 tons per day. A new continuous caustic system and additions to the power house are in process. The combined mill and bag plant payroll will attain 2,700 employees.

A recently installed interesting feature observed in the tour is the use of a water flume to carry pulpwood from wood yard to barkers. This flume is 1,300 feet long and waste water from the mill is used. Flow is at from 200 to 300 feet per minute; temperature about 135 degrees F. A conveyor picks up the pulpwood from flume to barker.

#### At the Bastrop Mills

At Bastrop, La., cradle of Southern Kraft Division and source of many top-flight company and mill management personnel, the public aspects of the Jubilee was created by participation of Russell Long, son of famed Huey P. Long, who is executive counsel to his uncle, Governor Earl Long. He was presented with a three-foot "key" to the two I.P. mills there. The tour embraced the Bastrop mill, the Louisiana mill, the Bag-Pak (multiwall) plant, and the Single Service Division (milk container) plant.

**PICTURES TAKEN BY PULP & PAPER EDITORS WHO VISITED INTERNATIONAL PAPER COMPANY CELEBRATIONS** in New York and Alabama. Upper left, this corner of an exhibit at the Hudson River Mill, Corinth, N. Y., gave some interesting figures on operations there; upper right, part of the Corinth mill, snugly situated in the valley. Lower left, This woodland's exhibit at the

Mobile, Ala., operations demonstrates (at the left of the picture) selective cutting and thrifty stands, (at the right) straight cutting, the result of poor forest management; lower right, street sign at Palmer, N. Y., commemorating the 50th anniversary.

Distinguished participants in the event, held June 15, also included Mayor Edward T. Brodnax; A. L. Ross, Southern Kraft Division production manager; Lloyd Blackwell, Louisiana Polytechnic Institute forestry department; Francis Cook, Southern Pulpwood Conservation Assn.; and, Ion Walker, executive assistant to Major Friend and general chairman of Southern Kraft Jubilee arrangements.

The Bastrop mill was designed and built by Richard J. Cullen, now I.P. board chairman, in 1920. His associate and first Bastrop superintendent was Erling Riis, a former Wisconsin Thilmany man and now Southern Division vice president and assistant general manager. When the Bastrop mill had begun production, the Louisiana Pulp & Paper Co. mill, also in Bastrop, was built by Mr. Cullen. In this he was joined by Mr. Riis, and by Major J. H. Friend, who had been associated with a Bogalusa, La., paper mill. The Bastrop mill was acquired by International in 1925; the Louisiana mill in 1927. At the later date, Mr. Cullen and Maj. Friend also joined I.P., but in the meantime Mr. Riis had gone to Nashville, Tenn., rejoining his associates later.

In time the Bastrop mill became the experimental plant for the Division, and in 1947 was converted entirely to Chem-fibre (a corrugated material for box board) from hardwoods. The current capacity is placed at 280 tons daily; will be raised to 450 tons.

The Louisiana mill, capacity of 300 tons

INTERNATIONAL PAPER COMPANY	
HUDSON RIVER MILL - CORINTH, N.Y.	
ANNUAL PRODUCTION	
PAPER	10,000 TONS
WRAPPER	8,000 TONS
ANNUAL REQUIREMENTS	
PULP WOOD	120,000 CORDS
COAL	100,000 TONS
CLAY	20,000 TONS
ALUM	2,000 TONS
BIZZ	750 TONS
ELECTRIC POWER	6,400,000 K. W. H.





**PARTICIPANTS IN CANADIAN** ceremonies: S. L. deCARTERET (on left) President of Canadian International. (In center group) PREMIER MAURICE DUPLESSIS (left) of Quebec inaugurated Canadian International Paper Co.'s "open house" week at the Three Rivers, Que., newsprint mill he was presented with silver scissors to cut ribbon at mill entrance. In return he gave a copper piece to J. B. WEST (at right of center group), Mill Manager, as part of traditional ritual. At right is P. J. MURER, Mill Manager at C.I.P.'s Kipawa Mill.

daily as of the first of 1948, is being stepped up by 100 tons per day. Improvements will include a new Fourdrinier machine credited with being the fastest South at 2,000 feet per minute; added pulping capacity; increasing capacity of present machines by speeding up; a continuous causticizing system; additions to the power plant; and enlargement of the bleach plant.

The combined payrolls of the two mills at Bastrop will be raised from 2,200 employees to a total of 2,350 employees, not including increased woods personnel. The Louisiana mill produces kraft paper and specialties.

J. E. Pate, mill manager for both the Bastrop and Louisiana mills, took an active part in the celebration, as also did M. V. Orr, company agent for both units. Others included D. C. Campbell, assistant to Pate, and Zollie Thompson, pulp mill superintendent.

#### **What Happened at Springhill**

At Springhill, La., Dr. Harold W. Stoke, president of Louisiana State University, was the outstanding public guest for the occasion. The celebration was carried through by I. Y. East, mill manager, and Joseph M. Ros, company agent. The Springhill mill was built in 1937-38 to make kraft container board and fine grades of bleached kraft paper and board. Many had never been made previously from all-kraft pulp or on Fourdrinier machines, notably stock for milk containers. The company operates a container plant here.

Springhill's bleached and unbleached capacity are being increased, also machine capacity, and more power and new washers are being provided. The payroll runs to 2,100 persons, and its production prior to enlargement was 1,000 tons daily. The bleach plant capacity was 200 tons.

A vigorous campaign for statewide reforestation to keep Florida's pine tree prosperity was promised by Governor-designate Fuller Warren at the Panama City, Fla., mill's celebration. Warren deplored the fact that only 7 of the state's 22 million forest land acres are under fire protection. He extolled Internation-

al's progress, and its beneficial effect on Panama City. Other notables attending included Erling Riis, Mayor Carl B. Gray, J. W. Lowrey, mill manager, and H. D. Mathis, company agent.

#### **Other Southern Celebrations**

The Panama City mill was built in 1930-31, the first mill to be devoted exclusively to manufacture of kraft container board on Fourdrinier machines. The mill capacity was rated as being increased from 800 to 1,000 tons, with an accompanying increase in payroll from 1,550 to 1,700 persons.

Improvements include additional chemical recovery equipment, more digesters, a new power plant, lengthening and adding to the paper machines. Big, new washers are already in.

Over 500 invited guests participated in the Jubilee at Moss Point, Miss. Mill Manager J. Frank Mixon, first gave a brief history of the mill and then introduced H. E. Galloway, of Mobile, assistant secretary and assistant treasurer, of International Paper. Hermes Gautier, state representative, introduced Lt. Gov. Sam Lumpkin. E. A. Moore, company agent, participated. Wilmer Harris, personnel director, served as general chairman. A feature of a picnic was the presentation of 25-year medallions to 68 employees.

The Moss Point mill was promoted by International Process Co. Stockholders were principally English and Canadians. Operations began in 1913. The late Edward H. Mayo served as general superintendent and mill manager from 1913 to 1930. The mill was acquired by International in 1928. It was enlarged in 1934-35 to produce bleached kraft wrapping and specialty paper. It was the first mill in the South to make bleached butchers' papers from kraft. New digesters have raised pulp production from 230 to 270 tons daily and further improvements will bring the yield of kraft specialties to 250 tons by year's end. Included is a continuous caustic system. The mill payroll is 1,110 persons.

At Camden, Ark., Gov. Ben T. Laney participated in ceremonies. Albert G. Rozyskie and S. N. McMullen, mill man-

ager and agent respectively, directed the celebration. The mill at Camden was built in 1927-28, was enlarged in 1938, now produces multiwall stock converted in an adjoining plant. Its reported production of 365 tons of pulp and 341 tons of paper will have been stepped up by 115 tons of paper daily by the close of 1948. New 1,500-HP and 1,200-HP turbines drive two of its paper machines. The power plant is being added to. Thirty additional employees will bring the total to 1,580.

The Georgetown, S. C., mill was built in 1936-37, and in 1942 the addition of a third machine brought its capacity to 1,350 tons per day, then rating it largest in the world. A container plant was completed there in 1942. It now produces 1,430 tons of board daily, and has yielded as high as 1,515 tons in 24 hours. Since the war one of the machines has been converted to Chemfibre from hardwoods, with pulping equipment and other improvements, represented a \$2,000,000 investment. Currently Chemfibre production is being upped by 20 tons daily; board by 30 tons per day. The mill employs 2,400.

#### **CELEBRATION IN CANADA**

Significance of the pulp and paper industry to Canada, and the effective part played within that industry by the several mills of Canadian International Paper Co., were strikingly demonstrated during the company's open-house week, one of the largest undertakings of its kind ever achieved in the nation.

During the June 14-20 period CIP played host to nearly 60,000 visitors. The eight mills under its management in five Canadian towns—from Three Rivers, west to Gatineau, north to Lake Temiskaming and east to the Bay of Chaleur—were thrown open to the public so that residents in the mill communities could see for themselves how wood from Canadian forests is converted into scores of useful products.

"Our visitors gained a better conception of the importance of pulp and paper, Canada's biggest industry and major export, in the national economy," said S. L. deCarteret, president of CIP at the conclusion of the event. "There is a more intimate relationship now between the mills, the members of our organization and the people among whom we live and work."

The CIP mills visited during open-house week were: The big newsprint mill at Three Rivers, Que.; the Kipawa mill at Temiskaming, Que., producer of dissolving sulfite pulp; the newsprint and dissolving pulp mills and the plywood plant at Gatineau, Que., operated by the affiliated organizations—International Plywood, Ltd., Masonite Co. of Canada and International Fibre Board, Ltd.; the dissolving rayon pulp mill and laboratories of Industrial Cellulose Research, Ltd., at Hawkesbury, Ont., and the newsprint mill of the New Brunswick International Paper Co. at Dalhousie, N.B.

In each of the five towns donations of permanent recreational facilities for the benefit of employees and other residents

were announced by company officials. These presentations consisted of a children's swimming pool and bathing pier at Temiskaming, improvements to employees' clubhouse and donation to the city of a tract of land adjoining a municipal park in Three Rivers, children's playgrounds in Hawkesbury and Gatineau, and a beach in Dalhousie.

During the week, 724 employees of CIP who had accumulated 25 years or more of service to the company were presented with special commemorative awards in the form of bronze medallions. Together, these employees so honored have recorded more than 22,400 years of service.

There were many community gatherings, banquets, field days, dances, sport events—even a fireworks display at Temiskaming.

At Three Rivers, Premier Maurice Duplessis of Quebec officiated. He visited the plant escorted by President de Cartier, and at a banquet held in the new club house of the Metaberoutin Golf Club which is operated by an employees' association, the Quebec premier, who has been considered widely as a sharp critic of forest industries, insisted that both industry and government shared the responsibility of perpetuating the country's forest resources and declared that, so far as he was concerned, pulp and paper would always remain in the hands of private enterprise.

#### I. P. Will Add Another Container Plant

International Paper Co. has acquired a site in Wooster, Ohio, for a new corrugated kraft container plant. International's existing container plants, some recently acquired are at: Chicago, Ill.; Georgetown, S. C.; Springhill, La.; Los Angeles, Calif.; Kansas City, Kan.; Somerville, Mass.; St. Louis, and Whippoorwill, N. J.

#### Timber Survey Made For Proposed Alberta Mill

Cellulose Engineers, Inc., of Seattle, have been engaged to prepare all surveys and plans for a proposed new pulp mill at Red Deer, in Central Alberta. Alberta Pulp Mills, Ltd., a local corporation, has been formed.

Unlike other provinces in Canada, Alberta has no official information on its timber and so a provincial forester is accompanying the Cellulose Engineers' cruiser on a survey to determine the accessibility and extent of suitable pulp-timber northwest of Red Deer.

Red Deer is halfway between Calgary and Edmonton, Alberta, and is on the Red Deer River, a branch of the South Saskatchewan. Negotiations have begun with Red Deer officials for a quarter section within the city limits for a mill site.

This has no connection with the proposed mill near Edmonton planned by R. R. Sweezey of Montreal.

H. B. SOMERSET was elected president of the Australian Pulp and Paper Industry Technical Association at its recent general conference in Hobart, Tasmania.

## PULP & PAPER IN SWEDEN

### New Pulp Export "Tax" is Explained

A staff member of PULP & PAPER, on special assignment to Europe and the Scandinavian countries, came back to report background on a new Swedish "tax" on wood pulp which was recently protested by the U. S. State Department in behalf of the U. S. Association of Pulp Consumers.

Sweden, he pointed out, had its own problems of inflation and every effort was being made to hold down building costs due to a housing shortage comparable in ratio to that in the U. S. Any big rise in prices was bound to affect other timber uses, he said. When U. S. and British demand for pulp began to pressure prices, Swedish informants told him the government decided on a 50 kroner (\$14) levy per metric ton of chemical pulp exported with the proviso that the larger portion of the amount would be distributed back to producers over a three-year period to begin in 1951 and the balance would be used on reforestation projects.

Some Swedish observers in that country told PULP & PAPER'S traveling editor that there was a threat on producers of refusal of export licenses if they raised prices, and the special levy was an alter-

nate to a possible flat export tax out of which mills would get nothing.

Latest data is that the 50 kroner levy is now to be divided in a manner less desirable to the industry, say 25 kroner to be held for later distribution, with two-thirds of the remainder of 25 kroner to be used for reforestation and one-third for increased general "social benefits."

Some observers claim that existing benefits are already so great that labor efficiency and incentive has declined. Meanwhile the government is said to be leaving no stone unturned in attempting an effective compromise.

PULP & PAPER'S representative interviewed Ewart Landberg, managing director of the Swedish Paper Mill Association, and C. G. Asplund, chief assistant to T. Lundgren, managing director of the Swedish Cellulose Association, among others. Neither cared to comment on the situation for the U. S. business press due to the delicacy of the situation during June and the fact that a settlement was expected at any moment.

Representing government in affairs affecting the Swedish pulp and paper industry is Statsrodet John Ericsson, Kanslidusset, Stockholm, Sweden.

## Honors for Dr. Otto Kress

### Mentor to Many in This Industry



DR. OTTO KRESS (bareheaded, facing camera), retired technical director and founder of Institute of Paper Chemistry, Appleton, Wis., is being congratulated by President Nathan M. Pusey of Lawrence College (back to camera) a moment after Dr. Kress had received an honorary degree of doctor of science at Lawrence's recent 99th commencement in Appleton.

In second row of audience are several prominent persons of the paper industry. From left to right, in this row, are: WILLIAM E. BUCHANAN, Secretary of Northern Paper Mills and President of Appleton Wire Works; a lady; D. CLARK EVEREST, President of Marathon Corp., and Vice Pres. of the Institute; GEORGE BANTA; another lady; JOHN G. STRANGE, Sec'y.-Treas. of the Institute (Mr. Strange is fourth from the right end of the row).

#### Downington Machine in Utica Enlarged to Eight Vats

In 1906, the Mutual Box Board Co., Inc., Utica, N. Y., purchased a 5-vat, 108-inch Downington cylinder machine. This machine has been modernized from time to time and recently they ordered two net vat units complete, to be added to their present six, to give them a total of

eight vats. Capacity will be increased from 70 to 100 tons daily.

In addition, they ordered a new set of rubber-covered primary press rolls complete, 24 additional 42-inch by 102-inch face dryers and new spiral bevel gear drives for the entire machine. With additional Downington equipment, the Mutual machine will be one of the "biggest" in the world in number of vats.

# MEXICO MAKES RAYON

## Phenomenal Growth of Industry



ARTISELA MEXICANA, S.A., Mexico City, rayon plant visited by PULP & PAPER. It is managed by Herbert Sinclair, who is well known in U. S. and Swedish pulp circles.

Mexico, with four plants, is one of six nations which have been added to the rolls of rayon-producing nations in the past ten years. The other five are Colombia, with three new plants (although one is reported suspended); Chile, with two plants; Cuba, Peru and Egypt, with one each. Planning to enter the rayon industry in the near future are Australia, China, India and the new nation of Israel, making a total of 35 countries as rayon producers. Many will be dependent to some measure on North American wood pulp, for which there is already considerable competition between paper and rayon and plastics industry.

Mexico's rayon output was just 55 lbs. in 1942; 550 lbs. in 1946, 3,000 lbs. in 1947, but when its four plants are all producing at capacity, output will leap to over 10,000,000 tons, according to information obtained on a recent tour of Mexico by PULP & PAPER.

### Expansion in Mexico

A greatly expanded rayon industry in Mexico will be importing eventually seven or eight thousand tons of high alpha wood pulp from United States or Canada and, perhaps, Sweden. This figure may even go higher.

There are now four rayon plants in Mexico. A year ago there was only one small one. It wasn't until 1948 that Mexico entered the rayon staple field, although producing rayon filament yarn since 1942 in small quantities.

Two plants have started up in the past year and a third was only awaiting delivery of a dynamo from the United States in order to start operations when a PULP & PAPER editor recently visited these centers.

### MILLION TONS OF RAYON

World production of rayon filament yarn and staple in 1947 totaled 1,990,710,000 pounds, an increase of 19% over 1946 and 9% above 1937, according to Rayon Organon.

Filament rayon yarn output last year reached a new all-time peak, exceeding the previous record in 1941 by 4%. Rayon staple production also increased over the preceding year by 19%, but was well below the 1941 level.

Rayon output last year moved above 1946 levels in all areas. European production increased 24%, Asia 20%, North America 14% and South America 5%. While the advance in Europe's production of rayon in 1947 was especially striking, the United States led the world in the output of both rayon filament yarn and staple for the third consecutive year.

The global potential rayon producing capacity by the end of 1948 is estimated to be about 3 1/3 billion pounds.

Three of the giants of the American rayon industry—E. I. du Pont de Nemours & Co., American Viscose Corp. and Celanese Corp. of America—were all indicating an interest in the development of a rayon industry in Mexico just a few years ago. Celanese already had a foothold but Mexican industrial leaders were convinced that the other two had serious intentions.

To whatever extent this may have been true at the time, it is now evident that the field will be dominated by Celanese Corp., which now has three rayon plants. Some of the wood pulp from Celanese' new pulp mill in British Columbia also will probably serve these mills.

The fourth plant is Celulosa Derivativa, S. A., of Monterrey, Mexico, which is owned by a glass company in that so-called "Pittsburgh" of Mexico. It makes viscose yarn, with about 500,000 lbs. capacity per year, and it started up about eight months ago.

As modern as any plant of its kind

in the world is the brand new acetate rayon manufacturing establishment of Celanese Mexicana, S. A., at Ocotlan, in the state of Jalisco, about 50 miles east of Guadalajara, Mexico's second largest city. This plant started up about a year ago at the rate of about three million lbs. of yarn, but was stepping up capacity rapidly to six or seven million lbs. annually.

As its name indicates, this is a Celanese subsidiary, and that company put the newest and finest equipment in the plant. Acetate for this Ocotlan plant has been spun at the Cumberland, Md., plant of Celanese Corp. and shipped to Ocotlan but eventually it was to treat cotton linters at its own operations. It will use 70% wood cellulose, all imported, and 30% linters pulp.

Viscosa Mexicana, S. A., is another new Celanese plant which will use the viscose process. This plant is at Zacapu, in Michoacan state. It is near Morelia which is about halfway on the road between Mexico and Guadalajara. Only awaiting electrical equipment to start up, Viscosa Mexicana was scheduled to begin producing at the rate of 6,000,000 lbs. per year but would eventually push production up to 10 or 12 million pounds.

The "daddy" of all the rayon plants in Mexico is Artisela Mexicana, S. A., located in San Angel, a southern suburb of Mexico City. Villa Obergon is the official name of this part of the city, but the natives still insist on using the religious, rather than the revolutionary, name.

A photograph on this page shows the plant which is under management of Herbert Sinclair, who is widely known in wood pulp circles in the United States and Sweden where he was formerly connected with the pulp industry.

This is another viscose process plant, making about 1,000,000 lbs. per year, but its production is being expanded. It started up in 1942 on rayon, formerly being a textile operation which Celanese purchased and converted to rayon manufacturing.

Thus three of the four rayon plants in Mexico use the viscose process and therefore use mostly wood cellulose as raw material.

### Finds "Rayon" Pulp Name Is Now Misleading

The Tennessee Eastman Corp., subsidiary of Eastman Kodak, has discontinued the use of the word "rayon" as a generic name for its cellulose acetate textile fibers and the products made from them because "two very different textile fibers are now being offered to the public as rayon, one known chemically as viscose or regenerated cellulose, and the other as cellulose acetate."

# Pulp & Paper

## MIDDLE WEST



FRANK H. COLDWELL (left), who has been named Assistant Mgr. of Power and DR. HERBERT W. ROWE (right), appointed Assistant Technical Director, both of Nekoosa-Edwards Paper Co., according to President John E. Alexander. Mr. Coldwell, an MIT grad, with Nepco since 1925, has been Power Supt. at the Port Edwards, Wis., mill. Dr. Rowe, graduate of Wabash College and the Institute of Paper Chemistry, has been Nepco's Research Director.

RALPH HAYWARD, president of Kalamazoo Vegetable Parchment Co., attended the Republican National Convention, as an observer, accompanying the Michigan delegation. Mrs. Hayward went along, too.

BERNARD W. McEACHERN has been elected vice president and general sales manager of the Northwest Paper Co., Cloquet, Minn. Clarence P. Sheldon has been appointed assistant general sales manager.

MARGARET DE JONGE, bookkeeper at Bergstrom Paper Co., Neenah, Wis., and her sister, Dorothy, assistant purchasing agent at Thilmany Pulp & Paper Co., Kaukauna, live in one of the oldest homes in Appleton, beautifully furnished with antiques. Another sister and nephew and niece live with them and the house is named Herrenshoek ("Gentlemen's Landing") for the Dutch town where their father was born.

EDWARD DAVITT, controller of the Kimberly-Clark Corp., Neenah, Wis., and

TOM TAYLOR, 82 years old, who formerly handled real estate matters for Consolidated Water Power & Paper Co. and lived many years in Wisconsin Rapids, has a new home where he is living in retirement at 92 Northgate Ave., Berkeley, Calif. He would like to hear from old Wisconsin friends.

A. E. (TED) SEXTON has retired as Insulite groundwood superintendent at Minnesota & Ontario Paper Co., International Falls, Minn., ending 31 years with M & O.

DAN QUIRK, Peninsular Paper Co., was recently re-elected as mayor of Ypsilanti, Mich.

## HANSEN, COLORFUL LEADER, DIES

Agner B. ("Ag") Hansen, one of the aggressive and colorful leaders of the American pulp and paper industry who was chosen by his associates as one of their top officials in the industry's war production efforts, died on the night of July 4 at his Green Bay, Wis., home. His wife died just a year ago.

Mr. Hansen, a native of Racine, Wis., was only 52. He was president, general manager and a director of the Northern Paper Mills at Green Bay. This company makes sulfite and groundwood pulp and has a daily capacity output of 125 tons of towel and toilet paper.

### Boex Becomes Manager

Milan Boex, assistant general man-

ager and sales manager of the company, has taken over Mr. Hansen's duties as general manager of the Northern Paper Mills.

Mr. Hansen was a navy ensign in the first World War, a graduate of Wisconsin, was chief chemist at the Marinette, Wis., mills and joined Northern as purchasing agent in 1922 and became mill manager in 1929, executive vice president in 1935 and president in 1941.

During the last World War, he was deputy director of the Paper Division of the War Production Board, being selected by the American Paper & Pulp Association for the post in order to step up critical production of pulp for war materials.



NEW OFFICERS OF THE KALAMAZOO VALLEY SECTION of TAPPI are, left to right: VICTOR BURSTEIN, Treasurer, Michigan Paper Co. of Plainwell, Mich.; J. J. HARRISON, Secretary, Michigan Carton Co., Battle Creek, Mich.; STEPHEN KUKOLICH, Vice Chairman, Lee Paper Co., Vicksburg, Mich.; PAUL BARTHOLOMEW, Chairman, Hawthorne Paper Co., Kalamazoo, Mich.

N. H. BERGSTROM, vice president of Bergstrom Paper Co., Menasha, Wis., recently "gave away" his daughter, Marjorie, who became Mrs. Franklin Moore, Jr., of Oshkosh, Wis. One of the pre-wedding parties was given by A. G. Gilbert of Gilbert Paper Co. and his wife.

VINSON KRAPFEL, young purchasing agent of all of the Consolidated Water Power & Paper Co. Mills, with offices in Wisconsin Rapids, was born in Nelson, British Columbia, and had a brief career in lumber sales in Spokane, Wash. He went to the University of Wisconsin.



Cliff Larson visited Finnish and Swedish mills two years ago with Chairman R. H. M. Robinson of M & O and during the war he was army personnel director at Camp Savage in Minnesota. The paper industry Larson hail from Niagara, Wis. Cliff was quite a football and hockey player in school days.

### Cliff Larson Promoted

Cliff Larson (left), who has worked in many capacities with Minnesota & Ontario Paper Co., in production, sales engineering and market research in 18 years, has been appointed assistant to the director of research of that company. This is a promotion and broadening of research duties beyond his recent assignment as administrative assistant to Vice President R. W. Andrews. He has been responsible for maintaining quality of all paper, board and siding made by the M & O mills. His headquarters will continue in the Baker-Arcade Bldg., Minneapolis.

Mr. Larson is one of three brothers with M & O and another is in the paper industry on the Pacific Coast. One brother is Clarence Larson, resident manager of the mill at International Falls, Minn.

# Pulp & Paper

## NORTHEAST

**C. R. CLARKE**, president of the Merrick Scale Mfg. Co., of Passaic, N. J., was bereaved by the loss of his son, Philip, who was drowned June 20 while on a weekend outing to La Valette, New Jersey.

**ELOF HANSSON**, large stockholder in Elof Hansson, Inc., New York, and senior partner in the firm of Elof Hansson, Gothenburg, Sweden, spent early July and late June in the U. S. with his wife and three of his children.

**EDWIN SUTERMEISTER**, author of "Chemistry of Pulp and Paper Making" and former TAPPI Gold Medal winner, received an honorary science doctorate from the University of Maine recently. Dr. Sutermeister is a member of the research staff of S. D. Warren Co., Cumberland Mills, Me.

**S. W. FLETCHER**, President of J. O. Ross Engineering Corp., was guest of honor at a surprise luncheon of the company's New York staff July 1, the 25th anniversary of the day Mr. Fletcher joined the organization. Mr. Fletcher was presented with a motion picture projector screen.

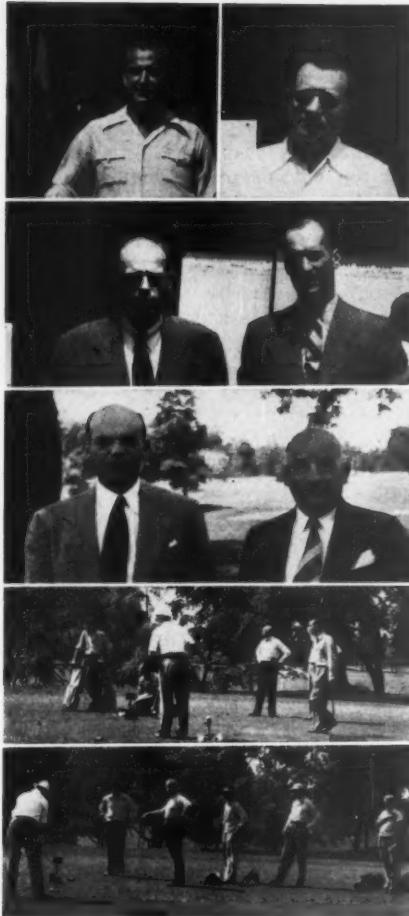
**H. V. HART**, formerly woodlands manager of St. Regis properties in Canada, New York and New Hampshire, with offices in Dufferin, N. Y., has been appointed general manager of pulpwood operations of the St. Regis printing publication and converting paper division, headquarters at 230 Park Ave., New York.

**PROF. CLARENCE E. LIBBY**, head of the Pulp and Paper Department, New York State College of Forestry, Syracuse University, recently visited mills in Virginia and North Carolina in connection with the hardwood pulping research project of the college.

**WILLIAM J. GAVIN** has been appointed a member of the New England sales force for the Industrial Division of Nopco Chemical Co. and for its subsidiary Metasap Chemical Co., according to announcement from home offices at Harrison, N. J.

**P. D. BRADLEY** became superintendent of operations on a consulting basis at B-F-D Co., Plattsburgh, N. Y., and E. C. Keyser was appointed general superintendent. J. W. Wettenmann became paper mill superintendent, A. T. Harding, Jr., converting superintendent, Alex Wodjenski, night superintendent, and William Wodjenski, tour foreman in the paper mill.

At B-F-D's Ogdensburg plant, Corwin Humbert has been engaged as mechanical engineer succeeding Carlton Fahey who has resigned to go with Weyerhaeuser at their Longview, Wash., mill. Mr. John Kaluta has been engaged as a designing engineer for new development.



**N. Y. PULP ASSOCIATION'S MEMBERS AND FRIENDS GOLF AT WINGED-FOOT CLUB, MAMARONECK, N. Y.** Top to bottom, left to right: ROGER EGAN, Vice President, Bulkley, Dunton Pulp Co., this year's President of New York Pulpmen's Golf Ass'n.; SAM DOWMAN, Gottschman & Co.

DON FRASER, Secretary-Treasurer of the Association, and PETER MACDOUGALL, Howard Smith Paper Mills, Ltd., who did not get into play because he is still suffering injuries from his experience in Jap prison camp.

BOB GREEN of Bulkley, Dunton, and WILLIAM FLOHR, Parsons and Whittemore, and Vice President N. Y. Pulpmen's Golf Ass'n., who were polite onlookers.

KIEV LARSON, Weyerhaeuser's Pulp Division, gets off a long drive while GORDON BROWN, of the same company, and others look on with interest. BOB BURKE tees off while R. G. McHUGH, H. A. PRATT and P. M. LODDENGARD, making up the foursome, look on.

### Pulp Association Trophies Won By Barrett, Vaughan

New York pulpmen got together for their annual golf fixture June 8th at the Winged Foot Country Club, Mamaroneck, with one of the brightest turnouts in some years. This year's tournament, sponsored as usual by the New York Pulpmen's Golf Association, was engineered chiefly by Roger Egan, president; William Flohr, vice-president; and Donald Fraser, secretary-treasurer.

Among the victors: Pagel Trophy, E. E. Barrett, Powell River Sales Corp.; Anders Trophy, E. B. Vaughn, Bulkley, Dunton Pulp Co.; Low Gross, Nils Odqvist, Elof Hansson Co.; Putting Prize, R. G. Mc-

Hugh, Powell River Sales; Kickers Handicap, H. S. Chellis, Brown Company. Flight Prizes were won by Vaughan, Odqvist, Chellis, McHugh; and R. G. Westad, Borregaard Co.; J. Paton, St. Lawrence Paper Mills; John Cornell, Paper Mill News; M. H. Randall, Price & Pierce.

**HIRAM LESTER PADDOCK**, chairman of the board of the Oswego Falls Corp. and of Sealright Co., Inc., both of Fulton, N. Y., died recently at St. Joseph's Hospital, Syracuse, at the age of 88. Born in Wolcott, N. Y., he had been vice-president of Lakeside Paper Co., and in the late 1880s helped found the Oswego Falls Pulp and Paper Co. He was its president for 40 years, and became chairman in 1922 when the name was changed. He was also president of the Skaneateles Paper Co. from 1910 to 1922.

**WILLIAM GREELEY** of 11 Holmes Dale, Albany, N. Y., was elected treasurer of F. C. Huyck & Sons at a recent board meeting. "Mr. Harry Eldridge, who has been both first vice president and treasurer, is thus freed to devote full time to his vice presidential duties and to broader phases of finance," said Frances H. Eldridge, president. Mr. Greeley, graduate of Union College, 1920, began with F. C. Huyck & Sons in 1920 in the cost department. He became a sales representative, covering New England and Middle Atlantic mills. Since 1930 he has been sales manager of the felt division.

**PETER G. VOLANAKIS** has been appointed manager of technical paper sales of the Strathmore Paper Co., West Springfield, Mass., succeeding Walton M. Blackford. In October, 1947, he was appointed acting manager of technical paper sales. He came from the chemical department of the Woronoco mills of Strathmore after a distinguished record overseas in the Army. He graduated from MIT in 1921.

### Unusual Honors for Wentworth of Penobscot

Walter V. Wentworth, manager of the Penobscot Chemical Fibre Co., was honored recently when the name of the company's athletic field at Great Works, Me., was changed to Wentworth Field. Mrs. Wentworth unveiled the marker and E. H. Clapp, 2nd, treasurer of the company, addressed a gathering including company officers from Boston. This was a complete surprise for Mr. Wentworth as he had not been told the real reason why he was invited to these exercises at the field.

Mr. Clapp recalled that over 50 years ago Mr. Wentworth was called to the P. C. F. Co. from Ticonderoga, N. Y., to help with some difficulties at that time. His work was so successful that he was called again the next year to take over management.

A management dinner, an informal reception, and ladies' night at the Lucerne-in-Maine clubhouse followed.

# PERSONALS

## PACIFIC COAST

### Cheney Bigelow and Others Appoint New Coast Agents

As the result of the recent passing of Frank Wilder, of Portland, Ore., who had long represented several important pulp and paper mill equipment companies on the Pacific Coast, there has been a number of changes in their representation in that important territory.

Ray Smythe, Park Building, Portland, Ore., has been appointed to take over representation of Carthage Machine Co., of Carthage, N. Y.

Walter A. Salmonson, 519 White-Henry-Stuart Bldg., Seattle, has been appointed to represent Cheney Bigelow, of Springfield, Mass., which now makes several products besides wires, and also DeZurik Regulator Co., of Sartell, Minn., in Oregon and Washington.

William W. Scudder, of Whittier, Calif., will represent Cheney Bigelow and DeZurik in California, which also was part of Mr. Wilder's territory.

ALBERT S. QUINN, vice president of Stebbins Engineering Corp., and HALVAR LUNDBERG, director of The G. D. Jenssen Co., a Stebbins auxiliary, are getting up in the world. Their offices have been moved several flights up to Suite 1504, Textile Tower, Seattle 1. Mr. Lundberg gave his daughter, Harriet, to Duane R. Lind, Seattle, July 3, in a pretty wedding.

V. C. GAULT, formerly personnel manager at Camas, Wash., plant of Crown Zellerbach Corp., has been made supervisor of industrial and community relations. Other promotions at the plant include MIKE PAUL, from assistant to personnel supervisor PAUL MILLARD, from finishing room superintendent, to assistant to R. G. Mispyle, supervisor of product quality and development.

HOWARD GERBER of Williams-Gray Co., Chicago, encountered a friendly highway cop on his tour of the Columbia River pulp and paper mills at the height of the recent floods and was handed an official pass for his Illinois car which took him through a lot of tough spots.

CHARLES K. McARTHUR, an engineer with The Dorr Company for 22 years, has opened an office for Dorr in the Lloyd Building, Seattle 1, and will be the company's representative in Washington, Oregon and Idaho. Mr. McArthur until recently, was manager of Dorr's North American Division with headquarters in New York.

WALTER PLACE, board mill tour boss at the Fibreboard Products mill in Stockton, Calif., died recently after 25 years with that company, always in the capacity of foreman.



CHARLES S. BARTON (left), Vice President and General Manager, Rice Barton Corp., Worcester, Mass., paper machinery manufacturers made his first trip this summer to Pacific Coast mills. With him were LESTER M. START (center), Vice President in Charge of Sales, who has made many trips, and RAY SMYTHE, of Portland, Ore., Western Representative of Rice Barton. GEORGE BARTON, President, made a Coast tour a short time prior to his son's visit.

C. L. MCPHAIL, until recently assistant manager of the lumber branch of Weyerhaeuser Timber Co., Longview, Wash., has been transferred to Springfield, Ore., to assist in construction of the company's new sawmill and new pulp mill. Before becoming assistant manager, Mr. McPhail was general purchasing agent for the Longview Weyerhaeuser operations.

JAMES M. MILLER, JR., 2931 N. 11th St., North Sacramento, Calif., will represent Pacific Car and Foundry Co., Renton, Wash., in Southwestern United States. Mr. Miller has a background of general contracting and shipbuilding experience and is a graduate mechanical engineer of the University of Southern California.

ROBERT O. ANDERSON, of the engineering office, Puget Sound Pulp & Timber Co., who is a son of the late Ossian Anderson, pioneer of the U. S. market pulp industry, entered his lightning class boat "Ptah" in the Pacific International Yachting Association regatta at Victoria, B. C. Howard Ekholt, son of Erik Ekholt, general superintendent, was a member of the "Ptah" crew that placed seventh in the event.

JACK McMULLEN, personnel manager of Pacific Coast Paper Mills of Bellingham, was recently elected to the post of grand knight of the Bellingham Knights of Columbus.

RUSSELL J. LEROUX, manager, Everett mill, Weyerhaeuser's Pulp Division, and Mrs. LeRoux entertained three nieces, 14, 16 and 18 years old, from Wisconsin Rapids, Wis., during the month of July.

COL. ALEXANDER R. HERON, executive vice president, Crown Zellerbach Corp., San Francisco, was featured speaker at the May 28 meeting, Paper Mill Men's Club, held at the Los Angeles University Club. His subject was, "Management Is People." Gerry Madigan, Johnson-Carvell & Murphy, is president of the PMMC.

SOMETHING NEW in co-operatives has made an appearance at the Puget Sound Pulp & Timber Co. Nine men joined forces to purchase a 30-foot cruiser, "And How," skippered by Ivan Campbell, instrument engineer. Other officers are Vance Reynolds, dispersing officer; Roy Anderson, navigator; Al Wyndham, engineer; Ralph Wyndham, deck officer. Others in the venture are Don Pearson, Fred Foley, Ducey Chads, all engineers from the laboratory; George Bonney, accountant, and Kenneth Fox, assistant steam engineer.

CECIL L. DILLING, formerly manager of North Portland, Ore., division of Western Waxed Paper Co., succeeded J. E. Crosby as manager of the Oakland, Calif., division, following Mr. Crosby's promotion to general manager of all Western Waxed operations. GEORGE W. DONALD succeeded Mr. Dilling as manager of the North Portland division. Mr. Donald was formerly sales manager.

JOHN H. SMITH, recently retired president of Hawley Pulp & Paper Co., Oregon City, Ore., received a sterling cocktail set presented to him at a farewell party in his honor given June 11 in Portland, Ore., by the Hawley foremen.

NILS O. ("Nog") GALTELAND, of Tacoma, Wash., former kraft mill instrument man there and now with his own company, is summering in Norway, returning in August. He toured Sweden, France and England.

STANLEY E. RINGHEIM, president of the Washington State Association of Purchasing Agents and p. a. for Crown Zellerbach at its Central Engineering Office in Seattle, Wash., was principal host recently at dinner in that city in honor of Garnet Dickson, Toronto, international president of the association.

GUS OKERLUND, personnel and safety manager, Puget Sound Pulp & Timber Co., recently toured California with his family in his new car.

**SOUTH**

**Dr. Kimble Accepts Post With Union Bag in Savannah**

Dr. Glenn C. Kimble, who has been supervisor of Insulite (building and insulating board) research at Minnesota & Ontario Paper Co., International Falls, Minn., for nearly four years, has resigned to accept the position of superintendent of the mill technical department, Union Bag & Paper Corp., Savannah, Ga.

Dr. Kimble received degrees at Nebraska Wesleyan, Iowa State and the Institute of Paper Chemistry in Appleton, Wis.

At Savannah, he succeeds James R. Lientz, whose promotion to general superintendent of the pulp and paper division of Union Bag was announced in our June issue.

**DAVID KUHE**, former manager of kraft mills at Atenquique, Mexico; Plymouth, N. C., and Panama City, Fla., has been residing at Del Parque Hotel, Guadalajara, Mexico, investigating chemical industrial developments in that area.

**ERLING RIIS**, vice president of International Paper Co.'s Southern Kraft Div., Mobile, Ala., was inducted into office as president of the Mobile Rotary Club last month.

**GEORGE W. BRUMLEY**, who was pulp superintendent at St. Marys Kraft Corp., mill at St. Marys, Ga., has been named mill manager. He was succeeded as pulp superintendent by **FRANK A. JENSEN**, formerly with Hollingsworth & Whitney mill at Mobile, Ala.

**DR. RALPH E. ADAMS**, administration dean of University of Alabama, resigned after 25 years with that institution to become assistant to the president of Coosa River Newsprint Co., Childersburg, Ala.

**WALTER HARVEY** has been named pulp wood procurement agent for the Sonoco Products Co., Hartsville, S. C. The company is completing a semi-chemical pulp mill to furnish their 8th paper machine.

**J. M. MacBRAYNE** has been named head of the industrial engineering department at Union Bag & Paper Corp., Savannah, Ga. He was elevated from post of assistant to succeed J. H. Lenaerts, who was transferred to New York to serve as staff assistant to Vice President G. W. E. Nicholson.

**H. J. WEHRENBRECHT** has succeeded Reuben H. Brown, retired, as manager of the New Orleans plant of Bemis Bros. Bag Co. Mr. Brown continues with the company as special representative. Mr. Wehrenbrecht has been assistant manager at New Orleans since 1943 and joined Bemis in 1918.



**FRED B. DOHERTY**, whose appointment as Assistant Resident Manager of Rayonier Incorporated, Fernandina, Fla., was announced last month by Pres. Edward Bartsch. With Rayonier since 1933, his experience has been in the Washington State mills but he assisted Dr. Arthur Parrett in Southern pine pulp research at Shelton, Wash. He commanded a Navy 10,000-ton ship in the war.

**PAUL E. CORNING** has become Plant Engineer at the Rayonier, Inc., mill, Fernandina, Fla. He is a Cornell graduate in mechanical engineering and has served as plant engineer at International Paper Company's mills at Fort Edward and at Palmer, New York, as well as with West Virginia Pulp & Paper Co.'s mill at Mechanicsville, N. Y.

**TOM JEFFREY** has joined the staff of the Pasadena, Texas, mill of Champion Paper and Fibre Co. as supervisor of wage analysis. He was personnel manager for a Florida mill.

**EXPANSION OF WAREHOUSE** and sales space is being effected by Johns-Manville Sales Corp. at Houston, Texas. A new building costing \$200,000 is being erected at Blodgett and Velasco Sts. The building measures 290 by 375 feet and stands on a 2 1/2-acre tract. Part of the personnel of the St. Louis office will be transferred and the Houston site will become headquarters for the southwestern district. F. W. Dodson, Houston manager, will become district manager.

**NEARLY 10,000 PERSONS** took part in the Open House celebrated by Champion Paper and Fibre Co., at its Canton, N. C., mill on May 4-6.

## NEW MACHINE FOR CROSSETT MILL

A new 210-inch high-speed Fourdrinier machine for making lightweight kraft paper will be one of the main features of a 3-year building program begun at Crossett Paper Mills division of Crossett Industries, Crossett, Ark.

There is now a 196-inch (trim) high-speed Fourdrinier and an 80-inch (trim) cylinder machine in operation at Crossett. The Fourdrinier has listed capacity of 200 tons daily and multi-wall sack, butcher's and specialty kraft papers. The cylinder machine, with 60 tons capacity, makes tag and specialty board.

Rust Engineering Co. is providing buildings and installations, which also include facilities for three additional digesters, making a total of eight; a personnel building for 900 employees, etc. Contracts for other refining and pulp-making equipment will be announced later.

### Three More Mills in South?

There is still talk of three additional paper mills in the South, but there were no positive developments in this direction in recent weeks.

Southland Paper Mills, Inc., Lufkin, Tex., will not install that third newsprint machine at this time, according to a decision reached at a meeting of company directors on July 6. There had been a good bit of talk of such a possibility.

### New Bag Plant At Mobile

Arkell and Smiths, of Canajoharie, N.Y., has started up operations in a new multi-wall bag plant at Mobile, Ala. It also has plants at Wellsburg, W. Va., and Canajoharie.

**FURTHER IMPROVEMENT** of the New Orleans plant of The Flintkote Co. has brought a ten-year exemption from ad valorem taxes from the Louisiana Department of Commerce and Industry to cover a capital investment of \$232,489.00. This extension will provide employment for 38 additional persons.

**A CHEMICAL PRODUCTS DIVISION** has been formed by Masonite Corp., Laurel, Miss., for handling its two new by-products of wall board manufacture. These are hemicellulose and lignocellulose.

### Brown Mill at Monroe Plans New Additions

Exemption from ad valorem taxes for a period of ten years has been granted to the Brown Paper Mill Co., Inc., Monroe, La., for a new addition for the production of paper bags and similar products. The exemption is for a capital investment of \$250,000, the result of which will be the employment of 100 persons. The exemption was granted by the Louisiana Department of Commerce and Industry.

Exemption in the amount of \$80,000 was also granted to the Brown Container Co., Inc., of Monroe, covering the corrugated box plant which will employ 180 persons.

### Big Production at Macon

U. S. fiberboard production has been substantially increased with inauguration of production at Armstrong Cork Co.'s new multi-million dollar plant at Macon, Ga., but figures have not yet been released. The plant will utilize loblolly pine, and will employ 300 persons.



## CANADA

**BERT BARRETT**, formerly of Price Bros. & Co., Quebec, has been appointed resident engineer for the H. R. MacMillan Export Co. (Nanaimo Sulfate Pulp Co.) at Nanaimo, B. C.

**W. P. C. LEBOUTILLIER**, formerly woodroom superintendent of Price Brothers' mill at Kenogami, Que., has been appointed assistant to the general superintendent.

**H. O. McINERNAY** has been appointed general superintendent, Price Brothers' mill at Kenogami, succeeding A. G. Muirhead, resigned.

**CHARLES TITTEMORE** has been promoted to the position of control superintendent, Gaspesia Sulfite Co., Chandler, Que.

**BILL EGAN**, recently groundwood superintendent for Donohue Brothers at La-Malbaie, Que., has been appointed general superintendent of that company.

**HAROLD PEDERSON** has been promoted to the position of assistant superintendent of Provincial Paper Co. at Thorold, Ont.

**KORNELIUS SIEMENS**, formerly with Howard Smith Paper Mills at Cornwall, Ont., has joined the engineering staff of Abitibi Power & Paper Co., Sault Ste Marie, Ont.

**JEAN PAUL ROLLAND**, general manager of mills, Rolland Paper Co., Quebec, has been elected vice-chairman of the Montreal branch, Canadian Manufacturers Association.

**R. H. PRICE** of Price Brothers Sales Corp., Quebec, returned recently from a tour of Latin America.

**EINAR WALLOE**, superintendent of Bloedel, Stewart & Welch pulp mill at Port Alberni, left in July for an auto tour of Wisconsin and Eastern Canada to visit some mills with which he was previously associated.

**LAURENCE B. POPHAM** was recently appointed secretary of Abitibi Power & Paper Co.

**CLAUDE COWIE** is the new assistant mill manager of the Iroquois Falls newsprint mill of Abitibi Power & Paper Co.

**CARL HAND**, formerly of Quebec North Shore Paper Co. at Baie Comeau, Que., has joined the Bloedel kraft pulp mill at Port Alberni, B. C., as electrician.

**ALLISTER A. MCKENZIE**, with Alliance Paper Mill, Ltd., St. Catherine, Ont., for 19 years, joined Zellerbach Corp., Camas, Wash., in late June where he is in charge of No. 1 finishing room.

**CHARLES R. WHITEHEAD**, vice president of Consolidated Paper Co., Montreal, and for years regarded as "the grand old man of Canada's pulp and paper industry," paid his first visit to the Pacific Coast since the turn of the century in July.

**R. O. SWEZEY**, Montreal promoter interested in plans for a \$14,000,000 pulp and paper mill in Alberta, visited Edmonton recently to confer with government officials, reported preliminary work well under way.

**AUBREY CRABTREE**, president of Fraser Companies, Ltd., operating mills in New Brunswick, has been elected a director of Donnacona Paper Co., manufacturers of newsprint, insulating board and other products in Quebec.

**A. C. COOK**, machinist at the Kenora, Ont., mill of Ontario-Minnesota Pulp & Paper Co., Ltd., recently received documents from England verifying that he is a baronet, direct descendant of a line whose title dates back to 1618.

**FRANK HICKLING**, comptroller of Minnesota & Ontario Paper Co., has been

named deputy state commander of the American Legion in Minnesota.

**H. R. M. ACHESON** has been appointed assistant manager of the Fort William newsprint mill of Abitibi Power & Paper Co. He was formerly at Chandler, Que., with Gaspesia Sulfite Co.

**TED ZAGER** has been acting paper mill superintendent at the Thunder Bay Paper Co., Port Arthur, Ont.

**JOHN VICKERS**, formerly manager of Canadian Johns-Manville organization in Vancouver, B. C., will become general sales manager, Sidney Roofing & Paper Co., August 1, succeeding P. W. (Pat) Field, who is retiring.

**CANADA PAPER CO.** at Windsor Mills, Que., plans expansion and modernization of this plant at an expenditure of several million dollars over the next few years. Pulp and paper output will be substantially increased, and the big factory will also be enlarged.

Additional timber holdings have been acquired.

## News Made With 15% Straw At Ontario Paper Company

Newsprint has been experimentally produced with 5% to 15% straw mixed with sulfite and groundwood by Ontario Paper Co., Thorold, Ont.

The first experimental run of the paper machine working on this mixture amounted to approximately 50 tons.

According to officials of Ontario Paper Co., the process used was developed at the Peoria, Ill., laboratory of the United States Department of Agriculture, which was described in detail and illustrated in an article in the 1948 North American Review Number of **PULP & PAPER**, beginning on page 60.

"The experiment," they stated, "disclosed that while use of straw as a substitute for wood pulp raised newsprint production costs somewhat, straw fiber could be used more advantageously in producing higher-grade papers, which would improve wood supplies for newsprint manufacture."

The finished product at Thorold appeared to have much the same characteristics as paper made with the usual ingredients, groundwood and sulfite pulp. Strength was similar and the surface seemed even smoother than in the regular type of newsprint.

The straw was purchased from nearby farms in the stack and trucked into the mill's research laboratory. There it was chopped by ordinary ensilage cutters and cleaned of chaff. It was then placed in a large spherical steam cooker where small amounts of sodium sulfite and soda ash were added.

The mixture was cooked for two hours at a temperature of 340 degrees Fahrenheit and at a pressure of 100 pounds a square inch. It was then decanted onto a screen over a pit and the chemicals were

washed away with water. At this stage the straw still looked like straw, but its structure had been weakened.

Delivered into a refiner, the straw was mixed with water and agitated so that the fibers were set free from the other plant structure. They then passed through screens that held back any fiber bundles that had not been separated.

After passing through the screens the thick fluid was partly dehydrated to a semi-solid mass. Bleaching powder was added to remove the yellowish color of the fibers, and then the material was washed again to remove the bleach residues which were now highly colored.

The white liquid, somewhat thicker than cream, was mixed with groundwood and sulfite pulp and formed a sheet on the paper machine nearly 200 inches wide, at the rate of 1,100 feet per minute.

The proportion of the straw fiber was varied from 5 to 15% of the total. Engineers said it might be possible to increase the proportion to 25%.

### Dr. Lathrop's Comment On Ontario Trial

Commenting on the part-straw newsprint made at Ontario Paper Co., Dr. E. C. Lathrop, head of the Agricultural Residues Division of the Northern Regional Research Laboratory, U. S. Department of Agriculture, Peoria, Ill., told **PULP & PAPER** that the very fine pulp made from wheat straw is not economically suitable for newsprint but is better suited for fine papers.

However, he explained, the Ontario Paper Co. gave the research laboratory this opportunity to try out its pulping process on a mill trial. "Naturally," he said, "a number of compromises had to be made" with the process which was described and illustrated in the North American Review Number (1948) **PULP & PAPER**.

# MEN OF HAMMERMILL

## PROUD OF THEIR NEW MACHINE

A result of eight years of planning and more than two years of actual construction and installation, No. 7 paper machine at Hammermill Paper Company, Erie, Pa., has gone into steady production. It has increased Hammermill production by thirty per cent.

The long planning and work on the part of Hammermill executives and engineers together with the machine builders and auxiliary equipment manufacturers is visible now in one of the most modern paper-making layouts to be found anywhere in the world. The big Rice Barton machine—180 inches on the wire, 164 inches trim at the reel—is as up-to-date as can be made for fine papers today, embodying several very unusual features. As sweet-running as a fine watch, No. 7 has already struck up the hearts and minds of Hammermill men that pride of accomplishment and ownership usually reserved only for machines which have been rolling along for many years. Moreover, the new machine and its attendant modern stock preparation represents a long stride in Hammermill's consistent history of progress.

The planning for the recent Hammermill improvements goes back to the mid 1930's and was, of course, seriously interrupted by World War II. It was that long ago that Norman W. Wilson, president of Hammermill, returned from a vacation with plans for mill expansion which are now in the final stages. The plans, quickly approved by the executive committee, included a new machine which would be No. 6—because then Hammermill had only five machines.

But the demand for Hammermill products, which had been steadily increasing, was too heavy to allow Hammermill to wait until No. 6 machine could be engineered, built and installed. When an opportunity came to purchase a used paper machine in 1939 Hammermill shelved plans for No. 6—later to become No. 7—and bought the equipment. This machine, which is 112 inches on the wire, became No. 6. In the fall of 1939 construction began on a new building for this machine. This building was completed in February, 1940, and provided space for not only No. 6 but a future No. 7 machine. The overhead crane, electrical substation, ventilating system, sewers and even the foundation for No. 7 were incorporated into the new building. By February 29, 1940, the No. 6, completely redesigned and remodeled, was making paper.

During the war No. 6 produced more than 75,000,000 pounds of paper, and it is still going strong. This production was, of course, in addition to that of the other Hammermill machines: No. 1—102 inches;



**NORMAN W. WILSON**, President of Hammermill Paper Co., Erie, Pa., and President of Grays Harbor Pulp & Paper Co., Hoquiam, Wash. (a paper mill in connection with Rayonier's pulp mill in that city). Born in Erie, educated there and in correspondence school. Mr. Wilson joined Hammermill in 1901, became Sales Mgr. in 1914, Gen. Mgr. in 1929, resident in 1940. He and Mrs. Wilson (former Flora Nick) live at 502 Hammermill Road, Erie, and have one son, Norman Douglas Wilson.

No. 2—125 inches; No. 3—102 inches; No. 4—132 inches, and No. 5—102 inches.

When the war was over the plans for the new machine were taken off the shelf. The "No. 6" on the plans was changed to "No. 7" and the plans, started years before, were reworked in the light of wartime developments in electronic controls. And, also, from time to time during the war the Hammermill engineers had found time to incorporate into these plans certain things learned in those hectic years, things that fitted into the Hammermill pattern of high quality paper at the highest possible speed and low cost. Just before Hiroshima and Nagasaki, the Hammermill executives indicated to Rice Barton Corp. their intention of purchase. The machine was scheduled for completion by midyear of 1946. But strikes in the electrical, coal, and steel industries affected not only the machine builders but parts that had been ordered from more than 100 suppliers.

But in Dec. 1947 the machine first furnished its beaters and first stock flowed onto the 88 foot long wire at 3:30 a.m. on Dec. 3. Paper was made most of that day and then the machine was shut down for the inevitable adjustments. Saleable paper was made starting on Dec. 8. Today the machine is turning out Hammermill Bond at up to 750 feet per minute,

and the machine can attain a maximum of 1,000 feet per minute.

### Stock Preparation

Before examining the new machine in some detail, it is of interest to look at the stock preparation facilities which Hammermill has installed for No. 7. The new stock preparation building is steel, brick and concrete, and has been designed with plenty of extra room. There are six Noble and Wood 2,000 pound beaters whose bottoms are tile lined and whose sides and tackle are made of Monel. All piping in connection with stock movement is fabricated copper by Koppperman's. Also in the new 90 by 110 foot beater building are two Noble and Wood type C Jordans with direct connected synchronous motors. Each beater is driven by an Allis-Chalmers motor and Werthington V-belt drive. Each beater has motorized roll raising device and roll pressure recorder. Overhead is a 10-ton Shaw-Box crane. Pulp and other items of beater furnish are brought to the beater room by electric trucks but later will be handled in slush form.

The tile beater chests are by Stebbins Engineering & Mfg. Co., and are equipped with Noble and Wood propeller-type agitators. Capacity is 8,000 pounds at five per cent consistency, while the two Stebbins machine chests, which may be operated singly or as a unit, hold 4,500 pounds each at four per cent. The consistencies mentioned are only to indicate chest capacities. The machine chests are also equipped with propeller-type agitators.

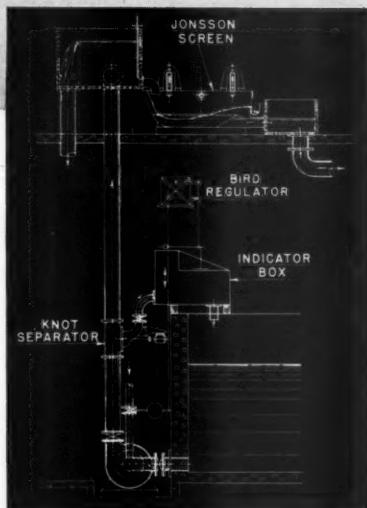
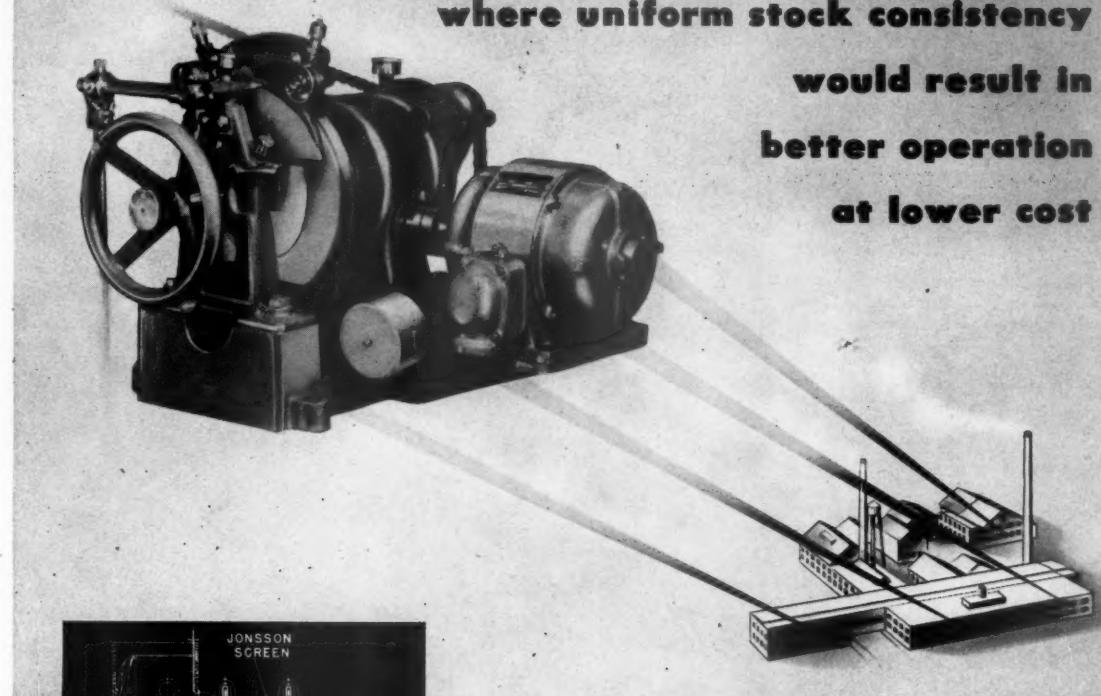
Below the beater room floor all chests and stock flow equipment are readily accessible at all vital parts and levels by iron work cat walks railed for safety. All surfaces that come in contact with the stock are Stebbins tile, Monel, or are fabricated copper, insuring the cleanest paper possible. Each of the six beaters for No. 7 has a capacity of 2,000 pounds of dry weight fiber.

A seventh beater housed in the new beater room is not for No. 7 but for No. 6 machine. This is a Noble and Wood beater from designs by Hammermill's engineering department. Its new feature is that it has the roll separate from the tub, with an independent propeller for mixing. A pump delivers stock from tub to roll. This is said to provide more efficient use of horsepower, faster mixing and extreme flexibility of control.

### Description of Machine

According to K. C. Neuenfeldt, engineer in charge of No. 7 paper machine installation under A. S. Goodrich, chief engineer at Hammermill, the original

Think of all the places in *Your mill*  
 where uniform stock consistency  
 would result in  
 better operation  
 at lower cost



AT THE KNOTTERS, FOR EXAMPLE

Here's one of the many useful and profitable applications of the Bird Consistency Regulator — at a Jonsson Screen to assure maximum efficiency of the knotting and pulp screening operations.

Now, with the Bird Consistency Regulator, there's no longer any excuse for operating with wrong or fluctuating consistencies anywhere along the line — at machine chests, stock chests, Jordans, knotters, brown stock washers, deckers, or wherever.

The Bird Regulator handles all kinds of stock, free or slow. It maintains consistency at whatever is desired, whether less than 1% or as high as 12%. Variations never exceed 0.1% heavier or lighter than desired. You just set it and forget it.

There are lots of places in your mill where this Regulator will pay for itself over and over. Better look into it.

**BIRD MACHINE COMPANY**  
 SOUTH WALPOLE • MASSACHUSETTS



RICE BARTON No. 7 MACHINE AT HAMMERMILL is shown at the left, as viewed from the wet end. In center aisle may be seen the automatic controls for the press rolls. At right is the No. 6 machine which was purchased and rebuilt at the outset of the war when plans for No. 7 had to be shelved.

plans called for a specially engineered machine of high productivity combined with great flexibility. The goal was never changed and it has been reached in No. 7, all hands agree. And C. F. Kingston, paper mill superintendent, agrees with the engineers on this basic point.

Of special interest at the wet end of the new No. 7 is the method of keeping the discharge from the screens at a constant level without using dams at the screens. The head is automatically controlled by a pneumatic valve and this prevents tumbling and cascading of stock. There are three type 100-A Bird screens, and the head box and inlet are by Valley Iron Works, the design a collaboration between Valley Iron and Hammermill engineers. Two Nichols Vortraps are used for tailings in connection with the screen arrangement.

Interesting, too, is the use of the dual breast roll which is in use at only three other mills at the present time. In the arrangement a 22 inch roll mounted below and back of the 14-1/2 inch breast roll takes the strain of the wire, allowing a small diameter breast roll at the lip, reducing thereby the distance and wire sag between breast roll and first table roll.

A unique white water system combines maximum fiber recovery with minimum use of fresh water and does it with rela-

tively inexpensive equipment.

Rice-Barton supplied the machine from specifications furnished by Hammermill and supplied principal items such as the Fourdrinier, two straight and one reversing press, twenty-six 60-inch diameter dryers and twelve 48-inch felt dryers, in the first section, one size press, eleven 60-inch dryers in the second section, and a Rice Barton calender stack with Farrel-Birmingham rolls.

Ross Engineering Co. supplied the com-

#### FACTS ABOUT No. 7

1. The new No. 7 machine at Hammermill is 290 feet in length and 15 feet wide at the wire.
2. Cost: More than \$2,000,000 with stock preparation equipment; eight years of planning, plus two years of building and erection.
3. Speed: 150 feet to 1,000 feet per minute.
4. Average daily production: 75 tons.
5. Total horsepower: 3,710 hp.
6. The new machine created promotions for 45 Hammermill men; 25 new jobs.
7. Among the new features: Automatic control of level at screen outlet; a head box of modern design that insures even weight across sheet; dual pumping units for flexibility in injection of pulp and water; high speed stock inlet, as well as knife slices and pitch adjustment; hydraulic press roll loading; automatic control of moisture in paper; roll ejector on winder; speaking boxes at key points.
8. More than 200 push buttons and controls.

plete air handling and heat recovery system over the dryer section and also installed the air system for the beater building.

Ross Engineering Corp. ventilation equipment is also installed in the beater room building, and the stock preparation building. This job included hood and exhaust system, having Briner Economizers for heating the incoming air utilized for heating and ventilating of roof, air make-up and bottom felt supply air. Provision was also made for heating water over the copper economizers. This machine was equipped with a Ross-Grewin System, calender cooling, trim conveying and summer ventilation along the front aisle.

The new machine is driven through a General Electric sectionalized electric drive with an Amplidyne generator with electronic tube controls. This handles the speed of the various sections within very fine limits.

There are two suction boxes ahead of the Reliance-driven dandy roll, and four following it. The 36-inch suction roll is from Downingtown Manufacturing Co. There is a Beloit reel with center wind feature, and a Cameron winder with electric brake on the unwind stand. The Reliance generator brake produces ap-

Hammermill Paper Company's new Number 7 paper machine is now in productive operation and Rice Barton Corporation pays tribute to the men of Hammermill upon the successful completion of a most creditable project.

That the new paper machine bears the name RICE-BARTON is a source of satisfaction to us. With the collaboration of the Hammermill engineers, the most practical features of modern paper machine design have been incorporated to produce a unit that will meet the most exacting requirements of the paper maker.



## RICE-BARTON CORPORATION

WORCESTER, MASSACHUSETTS

*Paper Machine Builders since 1837*



SCENES AT HAMMERMILL, left, six Noble and Wood beaters and the two jordans in the new stock preparation building, built to supply No. 7 machine. Beater at the far left is for No. 6 machine and has special features described in this story. At right, George L. Hawkins, one of Hammermill's electrical engineers makes an adjustment on the main General Electric control panel. Big No. 7 has the most

advanced use of electronic controls put on a Fourdrinier papermaking machine, say Hammermill officials. Eleven different motors and control panels drive its various parts and are coordinated electrically through pilot generators, vacuum tube amplifiers and Amplidyne generators.

proximately 80 per cent of the power used by the winder. Pumps are by Warren Steam Pump, Buffalo, Worthington, Nash and others. There is a Shephard-Niles crane for handling finished rolls. The main instrument panel with complete Foxboro instrumentation stands beneath a giant sized, illuminated tachometer visible the length of the machine room.

#### "No. 7 School"

Cost of No. 7 and auxiliary equipment was in excess of \$2,000,000, including beaters and operating equipment. Its average production per day will be 75 tons and it has already turned out more than 100 tons in a day. No. 7 can turn out an infinite variety of Hammermill grades but is now catching up on a vast backlog of orders on Bond. Its principal function will be to turn out more and finer papers, Hammermill executives point out.

One of the reasons No. 7 went into commercial production with much fewer than the usual number of "bugs" is due



DONALD S. LESLIE, First Vice President and General Mgr. of Hammermill Paper Co. He also is Vice President of Grays Harbor Pulp & Paper Co., Hammermill subsidiary at Hoquiam, Wash. He is a Vice President of American Paper and Pulp Association.

to the fact that all men connected with its operation went to "The No. 7 School." Each had a minimum of 40 hours of schooling on the equipment, both classroom and in the machine room. The result was that everybody was well acquainted with No. 7 before it turned a roll.

"Seven" has always been considered a lucky number. But behind No. 7 was a lot more than luck. It hums along today as a result of foresight, long range planning

which had to consider a great variation of economic conditions—and a lot of plain hard work. It's no wonder that everybody at Hammermill from President Wilson right out to the salesmen and agents in the field, are proud of No. 7 machine.



IN INDUSTRY NEWS:

F. HAROLD DAVIS (left) has joined the Chief of Staff office at Neenah, Wis., of Kimberly-Clark Corp. as Staff Superintendent of Newsprint. JAMES S. THORNTON (right) an MIT graduate, has joined the Sales Engineering Staff of the Downingtown Mfg. Co., Downingtown, Pa. He was formerly with Lamson Corp., and was in the Army in Japan and Korea, at time of discharge a Lieutenant Colonel.

## Lignin Talks in Appleton and on Coast

Sweden's "Mr. and Mrs. Lignin" are going to be the featured speakers at special industry meetings which are to be held in Appleton, Wis., Seattle, Wash., and Portland, Ore., in the course of the next month or so.

About 50 scientists from colleges, government labs and research institutes and the pulp and paper industry will attend a Lignin Round Table, Aug. 12-24, in Appleton, Wis. Closed meetings will be held at the Institute of Paper Chemistry, with Prof. Holger Erdtman and Mrs. Aulin-Erdtman of the Royal Institute of Technology, Stockholm, as prominent participants.

The distinguished Swedish couple will then head westward and will be the featured lecturers at the third annual industry-wide seminars staged by Pacific Coast TAPPI with the support of Coast

mill managements.

Probably twice that number — mostly young men and women from the technical staffs of a score or more of Pacific Coast mills — hear them in Lignin Seminars to be held at the Chemistry Building, University of Washington, Seattle, on Aug. 30-31 and in the Multnomah Hotel, Portland, Sept. 2-3.

Dr. Harold Bialkowsky, Weyerhaeuser Timber Co., who is TAPPI national committeeman, has again arranged these seminars and mill managements will give selected members of their staffs the two days' trip to either one or the other meeting.

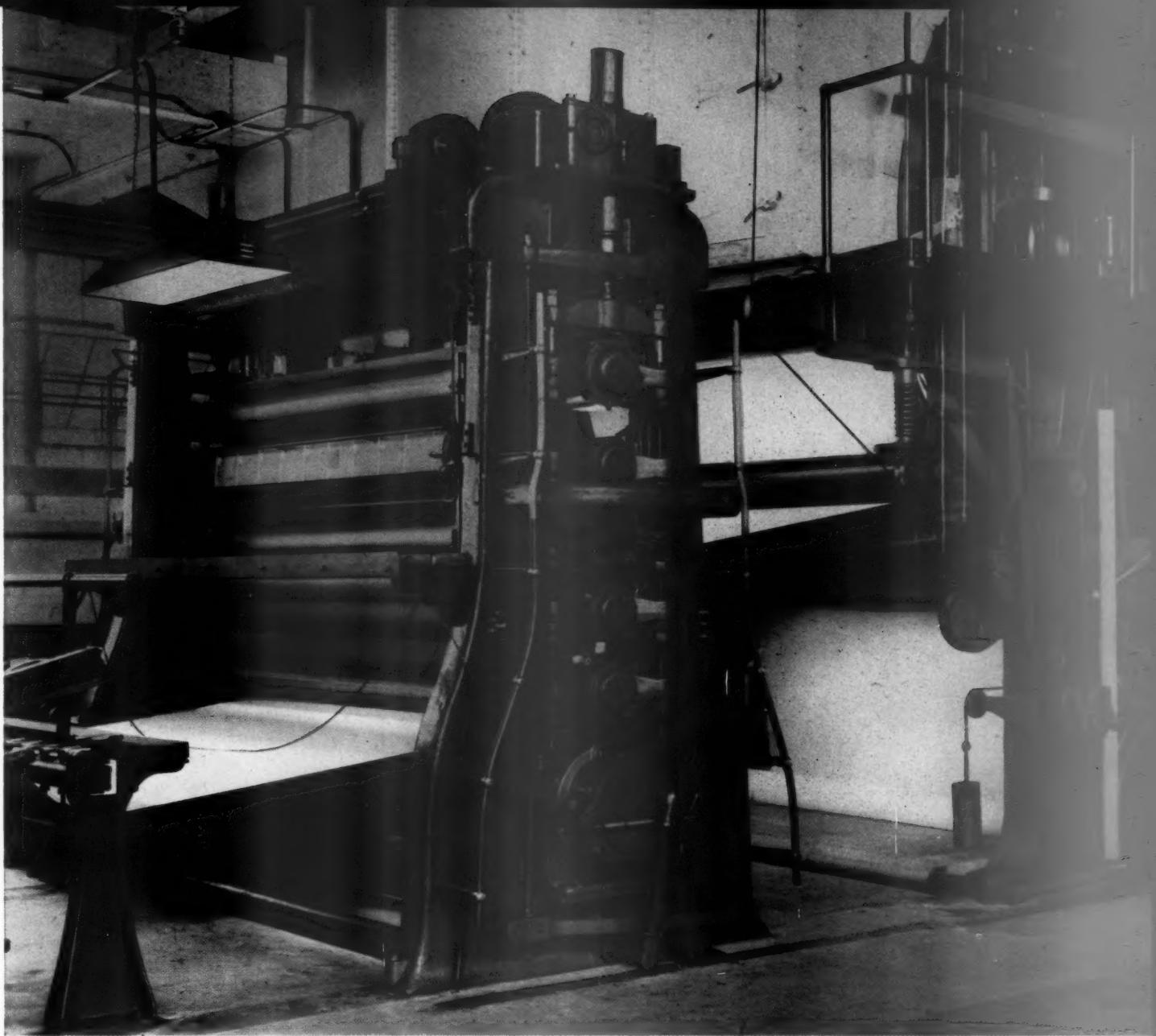
The Erdtmans will remain in the west to participate in the Lignin Round Table at the national convention of the American Chemical Society in Portland, Ore., in mid-September.

## New \$35,000,000 Mill Planned in New Brunswick

The New Brunswick legislature has passed a bill incorporating the Maritime Pulp & Paper Mills, which is to be located at Lepreau, New Brunswick, and in production early in 1950, according to promoters of the enterprise. Construction will be started almost immediately.

Capitalization consists of \$35,000,000, raised through subscription of \$100 capital shares by participating publishers and \$30,000,000 of low-interest long-term bonds.

Fixed assessment of the mill has been agreed upon at \$500,000 for the first 15 years and \$1,000,000 for the next 15 years. The mill will be tax exempt so far as county levies are concerned until it goes into production.



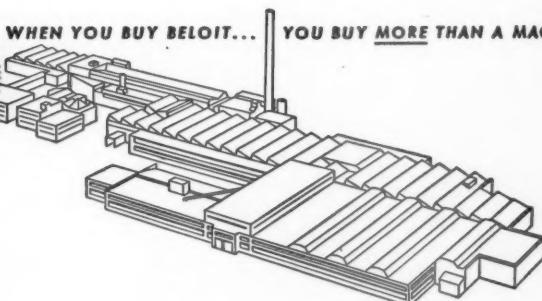
### **Sturdy, compact, efficient**

Sturdy box-frame calender stacks like this are seen in many mills—dependable performers running efficiently on a variety of grades. Unit includes special Beloit features: anti-friction thrust bearings, bab-

bitted bronze liners for easy changing, motor operated lift, bearings adaptable to continuous oiling, and other advantages of modern design. Air loading available if desired.—*Beloit Iron Works, Beloit, Wis.*



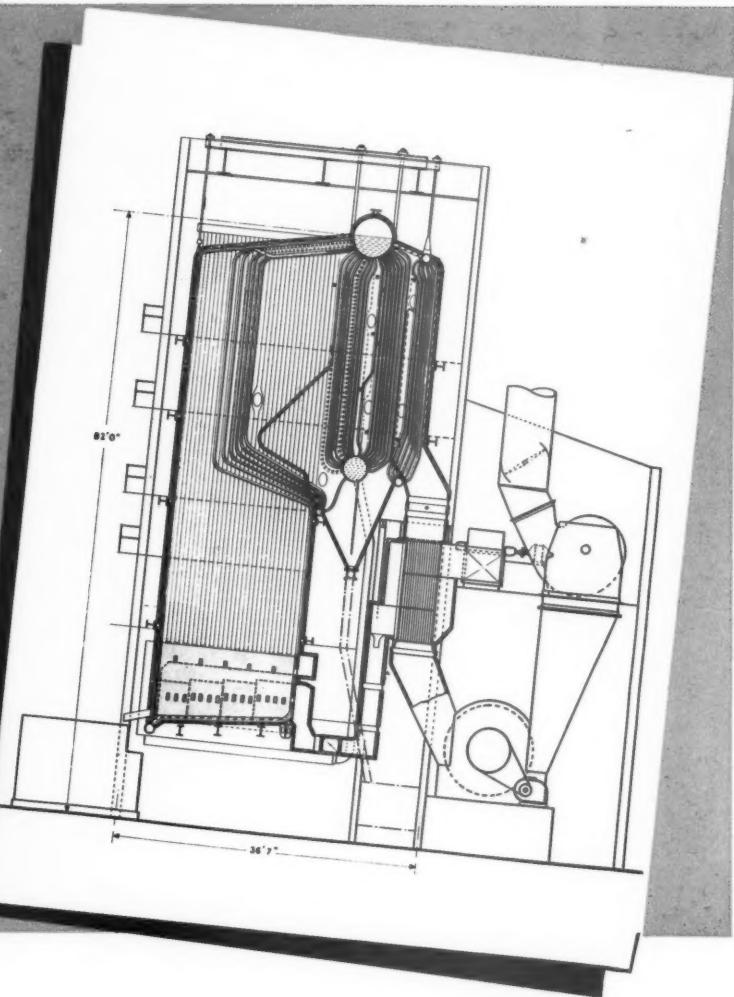
WHEN YOU BUY BELOIT... YOU BUY MORE THAN A MACHINE!



# **BELOIT**

**PAPER MACHINERY**

# New... at CALCASIEU Louisiana Mill MODERNIZES with B&W RECOVERY UNIT



CALCASIEU PAPER COMPANY is modernizing chemical recovery facilities at its Elizabeth, La., mill with a B&W-Tomlinson Recovery Unit now on order. Having 175-ton capacity, the new unit will produce approximately 86,000 lb. of steam per hour at 200 psi.

The consulting engineer is Alvin H. Johnson & Co., Inc., New York.

Preference for this new design B&W-Tomlinson Recovery Unit, proven since the war, is a tribute to B&W's pioneer research and development work over a long period. Outstanding results today are higher steam output, lower maintenance, and automatic mechanical lancing equipment, each contributing its share to low-cost pulp production.

P-28



FOR PAPER MILLS — B&W Recovery Units . . . B&W, Integral-Furnace, Stirling, Type H Stirling and Cross-Drum Boilers . . . Boiler Components . . . Pulverizers . . . Fuel Burning Equipment . . . Seamless & Welded Tubes for All Pressure and Mechanical Applications . . . Refractories . . . Process Equipment . . . Alloy Castings.

**BABCOCK  
& WILCOX**

THE BABCOCK & WILCOX CO.  
GENERAL OFFICES: 85 LIBERTY ST., NEW YORK 6, N.Y.  
WORKS: ALLIANCE AND BARBERTON, O.; AUGUSTA, GA.



**MORDEN MACHINES CO.**  
PACIFIC BUILDING • PORTLAND 4, OREGON

IN ENGLAND

Millspaugh, Limited, Sheffield

IN CANADA

The William Kennedy & Sons, Ltd.  
Owen Sound, Ontario

*Fernstrom Again  
Selects Mordens!*

The five Morden "Stock-Makers" on the new No. 3 Paper Machine at Fernstrom Paper Mills, Inc., makes a total of ten Mordens in this progressive mill.

Their first Morden was installed in 1938. Through the years they have installed additional units until now Mordens are used in all of their beating and refining.

Let us explain the advantages to be gained by getting started with Mordens in your mill.

See Article on Page 48

**STOCK-MAKER**  
*for Continuous*  
*beating and refining*

# NEW CALIFORNIA MILL

## Fernstrom Keeps Pace With State

The greatest migration of peoples and the greatest growth in population ever recorded in this world—in ancient or modern history—has taken place in just the past decade.

It has been a westward migration into California such as even Horace Greeley could never possibly have dreamed of. Most of it has flooded into the Southern part of California in the neighborhood of Pomona, Calif., site of the Fernstrom Paper Mills, Inc.

Here in the midst of orange and walnut groves, which are actually thriving on the very small but most welcome effluent from these mills, are the only paper machines west of Houston Texas, and south of Oregon City, Ore., which are making light weight papers.

The population of California has reached the ten million mark. And the Fernstrom Mills are keeping pace with it. They started up a new No. 3 machine this spring which has almost doubled the capacity of the two older machines.

About a \$2,000,000 investment has been made in this new mill and in converting and warehouse facilities. It is also an investment in the future of California, which was foreseen many years ago by the Fernstrom brothers, natives of Sweden, who started up their first machine in Pomona, 30 miles due east of Los Angeles, 22 years ago.

They selected this unique site for a paper mill on the old Spanish east-west highway, right in the heart of a fast-growing citrus fruit industry, and with a staff of technical and production executives who skillfully met the special paper requirements of the region, built up a business which was 70% in citrus fruit wrappers.

But in 1943, Erik Fernstrom and F. O. Fernstrom, and their associates decided it was time to prepare for the wider markets that were going to be created by the great influx of population in the state.

Vice President John E. Maurer, a director and treasurer of the company has been the executive in charge of the expansion program. An expansion committee, which he headed, was created at the mill and by this spring he had carried through to completion the program. Jack Rhodes, plant engineer, was his principal assistant in the project which was accomplished entirely by within-the-mill engineering.

So, today, Fernstrom Paper Mills has what is probably the fastest machine on flat tissue in all the world, capable of producing up to 1200 ft. per minute. It is a 160-inch Fourdrinier machine, trimming 144 inches on a wide variety



F. O. FERNSTROM (left), President, and JOHN E. MAURER (right), Vice President and Treasurer. Mr. Fernstrom, with his brother, Erik, founded the company. Mr. Maurer is Chairman of the Mill's Expansion Committee, carrying out the program of expansion described in this article.

### Fernstrom Sees No Change In Pulp Market Through '49

F. O. Fernstrom, president of Fernstrom Paper Mills, Inc., Pomona, Calif., in his 1948 report to stockholders, says he foresees "no marked easing up in pulp available to non-integrated mills, or dropping off in prices for wood pulp, through 1949."

"With the number of new paper machines starting up in the country, it follows that there will be much keener competition for available pulp, both foreign and domestic, which naturally will follow that there will be no price reduction for the commodity as long as there is not sufficient pulp to satisfy the needs of the paper machines in this country," he said."

---

of papers, with 26 paper dryers and five felt dryers and other modern auxiliary equipment. Modern continuous stock preparation equipment and electrical controls and drives for the machine are now in operation in the new mill.

And today instead of having 70% of its production in fruit wrap, Fernstrom is already making about 70% in other grades such as waxing tissue, semi-creped napkins, one-time carbonizing tissue and other tissue specialties.

This is the first machine added at Fernstrom since No. 2 (126 in. trim) went into production in 1928, just two years after No. 1 (123 in. trim). But in the ten years up to 1947—without adding a machine—Fernstrom doubled production on these machines, making 15,500 tons of paper last year.

No. 3 machine should average about 1,000 tons a month additional. It is capable of going even higher on heavier papers, with maximum drying capacity of about 65 tons per day, but it probably

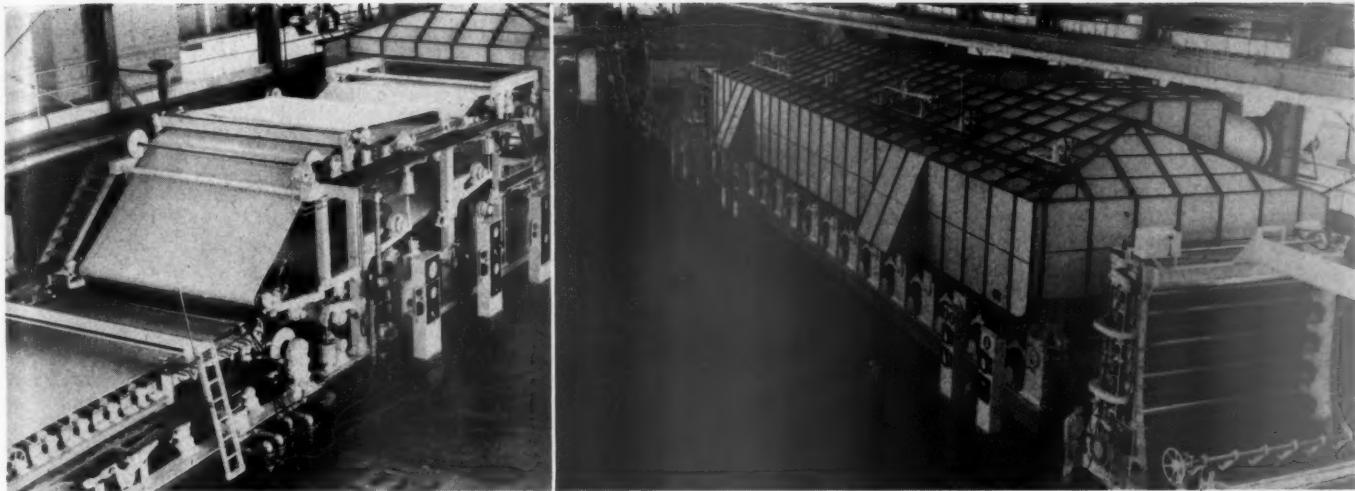
will be kept at lower drying rates with lightweight papers of higher quality. The diverse demands of the tremendous new population in California will determine the products. Much of this probably will be waxing, toilet and paper napkins, now shipped into Southern California from the east and the northwest. In future years, the machine can swing into a great variety of paper grades to meet new demand in California.

An increase in employment in both the manufacturing and converting departments at Fernstrom is one of the results of this expansion.

Another is the increased use of quality pulps. Bleached and unbleached sulfite and bleached kraft pulps will be largely used, but unbleached kraft tissue can also be made. Very little waste paper is being used. Both sulfite and kraft pulps are being purchased mostly from the market pulp mills of Washington and British Columbia and also from Sweden and Finland. This mill received one of the first shipments to the United States from Finland after the war.

Ground was broken for the new mill in January 1947 and it started making paper on March 18 of this year. On visiting the mill at that time, **PULP & PAPER** found one of the most interesting and best organized listing of all equipment which went into the new construction in any mill. A unique shop order, or account number, system was devised by Mr Maurer to segregate all expenses of the expansion program and provides a finger-tip record of everything that went into the new mill.

Principal installations in connection with the new mill at Pomona are the Fourdrinier, press section and dryer section of the big machine by Black-Clawson Co.; a B & W boiler with Bailey Meter controls; three Bird screens and Bird regulator; Valley Iron Works headbox and inlet; a Beloit patent suction press roll; Farrel-Birmingham calender stack; Black-Clawson reel; Cameron constant tension rewinder; Nash vacuum pumps; Bowser lubrication; Broughton and Emerson showers; Midwest-Fulton drainage; Brown and Mason-Neilan controls; one of the most elaborate J. O. Ross Engineering Corp. ventilation systems; compact and centrally controlled Reliance Electric & Engineering Co. paper machine drives; a Dilts Hydrapulper; Stebbins-lined stock chests; Westinghouse stock preparation control board and motors; continuous refining with Morden Stock-Makers and a Miami jordan in series; Sveen Pedersen save-all; a Shaw crane; Shartle and Fairbanks-Morse pumps; Terry steam turbine, and a modern Gen-



TWO VIEWS of new 160-inch No. 3 Fourdrinier Machine at Fernstrom Paper Mills, capable of making flat tissue at speeds up to 1200 ft. per min. Wet end and press section at left; full length of machine at right. For description of equipment see accompanying article.

eral Electric Cabinetrol and power distribution system.

#### General Construction

The new mill building, entirely separate and towering over the old structure which houses the two older machines, is constructed of steel and concrete. It has a cork-insulated Johns Manville rot-proof roof and corrugated Transite walls and steel sash windows. There is a basement depth under the machine of 12 ft. to provide access to felt dryers and for setting of machinery.

It is a solidly built building, as is common industrial practice in this area of Southern California which is well known for occasion earthquakes. Piers are 3 x 4 ft. thick and spread footers for the building are 6 x 8 ft. Heavy foundations are built primarily to support the 75 ft. span ten ton crane supplied by the Shaw Box Crane & Hoist Co. and for other structures. There is 23 ft. clearance between the crane and machine. The new building is 340 ft. by 115 ft. including two 20 ft. bays and the stock preparation department which have floors raised 14 ft. above the main machine room floor.

#### Stock Preparation

The stock preparation system is continuous and efficiently engineered so that the component parts are located in advantageous positions in relation to each other. This feature was the first important impression made upon a **PULP & PAPER** editor in touring this section of the mill. Wood pulp, which arrives by rail and is handled in the yard and to the mill with Clark Equipment Co. fork trucks, is received in 400 lb. dry bales. It is broken up in the 14-ft. diameter Hydrapulper, fed by a Lamson skip hoist. The mouth of the Hydrapulper is, as previously indicated, 14 ft. above the main floor level.

A dump chest of 2500 cu. ft., with a propeller agitator, immediately adjoins the machine chest, also of 2500 cu. ft.

capacity. The machine chest is agitated with a Shartle pump. There is a common wall between these two chests and they are arranged so as to require a minimum amount of piping. Stebbins tile brick linings are used throughout.

A Bird Machine consistency regulator is used. All copper piping is used. All pumps and motors and water valves are operated from a central stock preparation panel supplied by Westinghouse Electric Corp.

The machine chest is held at a constant level ahead of the series of five Morden Stock-Makers and the No. 3 Miami jordan. A machine chest pump maintains a pressure of 40 lbs. per square inch to the Mordens. These Stock-Makers have previously been used and found especially suitable for preparing sulfite stock for tissues at this Pomona mill. The Mordens are each driven by a 150 hp. 900 r.p.m. General Electric synchronous motor with 8/10 power factor. The jordan is driven by a 250 hp. G. E. synchronous motor.

The Sveen Pedersen flotation type Save-all supplied by the Bulkley-Dunton Pulp Co., Inc., is an important unit for this mill, with average recovered water consistency .3 lbs./1000 gals. of fibre per thousand gallons of water. Fresh water and fuel consumption are thereby reduced, which are important factors to the Pomona mill. Recovered fiber is returned to the dump chest where it is thoroughly mixed with the virgin stock from the Hydrapulper. The recovered water goes to the Fourdrinier showers and for dilution purposes. It should be mentioned here that the fresh water supply for this mill is obtained through four deep wells owned by the Fernstrom Paper Mills, Inc.

Average fiber loss from the entire machine is under 300 lbs. per day. Total water used is 300,000 gallons per day.

So we have here a partially closed system, but the small effluent from the mill is used a great part of the year in dry weather as an irrigation for sur-

rounding citrus and walnut groves. There is no river at Pomona and this effluent is greatly welcomed by the ranchers as it created a valuable humus as well as providing needed water.

Fairbanks-Morse 100 hp. white water and fresh water booster pumps and smaller Fairbanks-Morse sewer effluent and fan pit pumps are used. Shartle pumps are used on the Hydrapulper and machine and dump chests.

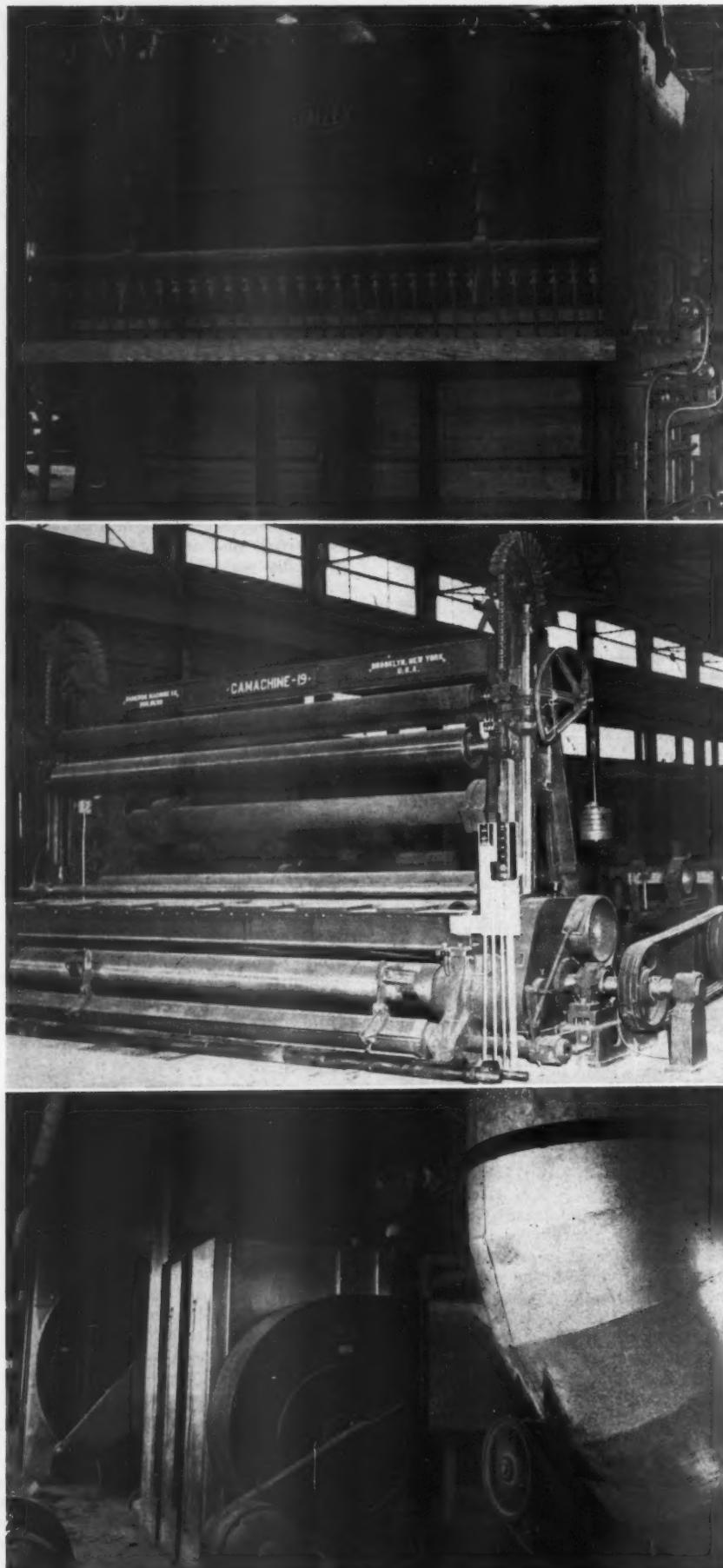
#### The Paper Machine

The new 160-inch Fourdrinier machine will be able to manufacture almost any grade of machine finished paper up to 20 lbs. weight with the pick-up felt. It is so designed that the grooved bottom couch can be removed and a suction couch installed. At such times, other changes in felt and press roll arrangements also would be necessary. When arranged with suction couch, bond papers and wrapping papers might be included in grades it could make.

Besides the Bird No. 3A type screens, three in all, there are also a Bird Dirtec recovery system and Bird oscillating showers at the head of the machine. The Valley Iron Works headbox is stainless steel lined, with an 80 inch head, especially designed by the Appleton, Wis., company to suit a wide variety of grades and speeds. It is made with two perforated distributor rolls.

The wire is 160 inches wide by 75 ft. long and is of the removable type. Monel and brass are used throughout the wire section. The extensive use of Monel in the new mill is noteworthy. Solid Monel construction is used in the suction boxes and the Save-all trays. There are several Monel-covered rolls on the wet end of the paper machine.

The pick-up felt will ordinarily be used. There are two press sections. The first is a Beloit patented 30-inch suction press, but supplied by Black-Clawson as were most of the parts of the paper machine. The second section is a plain press. Mason-Neilan pneumatic controls are on



#### EQUIPMENT IN THE NEW FERNSTROM MILL:

Top—This Valley Iron Works headbox from Appleton, Wis., was made especially for the new high speed tissue machine. It has an 80-inch head and two perforated distributor rolls.

Middle View—Cameron Machine Co. winder, No. 19 model, with 152-inch maximum trim. It has automatic constant tension drive stand.

Lower View—J. O. Ross Engineering Co. ducts and blowers for new paper machine hood and room ventilation.

both press sections.

There is a creping dryer 60 inches in diameter which also is being used as receiving dryer when making fruit wrap and flat tissues. Lodding Machine Co. has supplied a creping doctor. The first bottom dryer or junior dryer has a separate drive followed by a section of seven dryers. The last dryer section consists of 18 five-foot diameter dryers.

There is a total of 26 paper dryers and five felt dryers, all of 60 inch diameter. There are Bird doctors on all dryers. Following dryers is a 9-roll calender stack and uniform speed reel and, finally, the Cameron No. 19 winder of 152 inch maximum trim, with automatic constant tension drive stand.

Two L6 type Nash vacuum pumps in the basement are each driven by 75 hp. motors. The Bowser lubrication system, including all oil piping for the machine, is of the continuous flow type and carries oil by pressure to every bearing and gear and the oil returns by gravity. The Midwest-Fulton system is for dryer drainage and temperature control and is a complete system of this type.

#### J. O. Ross Ventilating and Heating

The J. O. Ross heating and ventilating system is one of the most complete installed in any paper mill. Besides supplying heat and ventilation to the roof area in the conventional manner, it also supplies ventilation air to the mezzanine area which has been described previously in this article, and to the space under the mezzanine and to both sides of the machine pit.

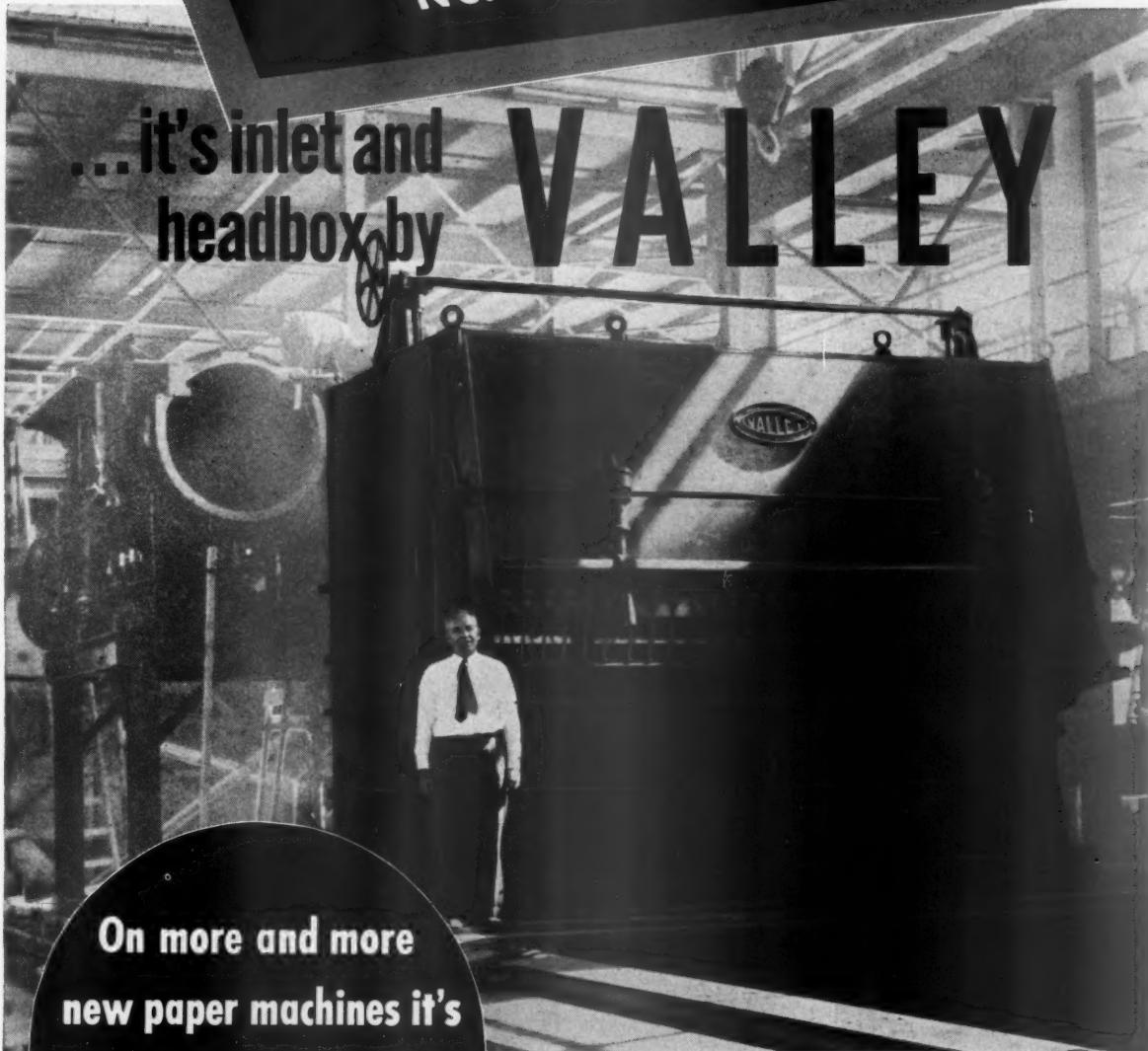
All the distribution duct equipment is made of aluminum, instead of the orthodox galvanized steel. Aluminum is coming into use in paper mills for this purpose, according to J. O. Ross engineers, and corrosion tests point to the possibility that it will prove superior to galvanized steel but this is still to be authenticated by operational data.

There are auxiliary air systems in the new Fernstrom mill supplied by J. O. Ross Engineering Corp. There is a felt drying system supplying heated air to the felts in the pit. There is a calender cooling system. Also, a trim conveying system and in this mill the trim is carried by air all the way back to the stock preparation system, the full length of the machine room.

Differential temperature controls are being used in the Ross set-up, whereby the air supply temperature is adjusted automatically to off-set any changes of

This is at  
**FERNSTROM PAPER MILLS, INC.**  
POMONA, CALIF.  
**No. 3 PAPER MACHINE**

...it's inlet and  
headbox by **VALLEY**



On more and more  
new paper machines it's  
Inlet and Headbox by

**VALLEY**

IN THE FOREGROUND:  
Mr. J. E. Maurer, V. P., Treas., Fernstrom Paper Mills, Inc.

**VALLEY IRON WORKS CO.**  
**Appleton, Wisconsin**

FORMATION

CALIPER

LEVEL SHEET

INCREASED SPEED

HIGHER TEST

temperature outside the building. This is done with thermostats.

#### Steam Generation

The new Babcock & Wilcox boiler of 30,000 lbs. per hour capacity is added to the three older smaller boilers still in use. The new boiler is 450 hp., with 250 lbs. pressure. It is operated by inducted draft fans.

This boiler will be fired by either natural gas or oil. Last year, the Fernstrom Paper Mills used fuel oil about two-thirds of the time. Natural gas, being cheaper, is used whenever possible and a natural gas line from Texas was brought in to Southern California recently. As a result, it is now probable that gas instead of oil will be used most of the time.

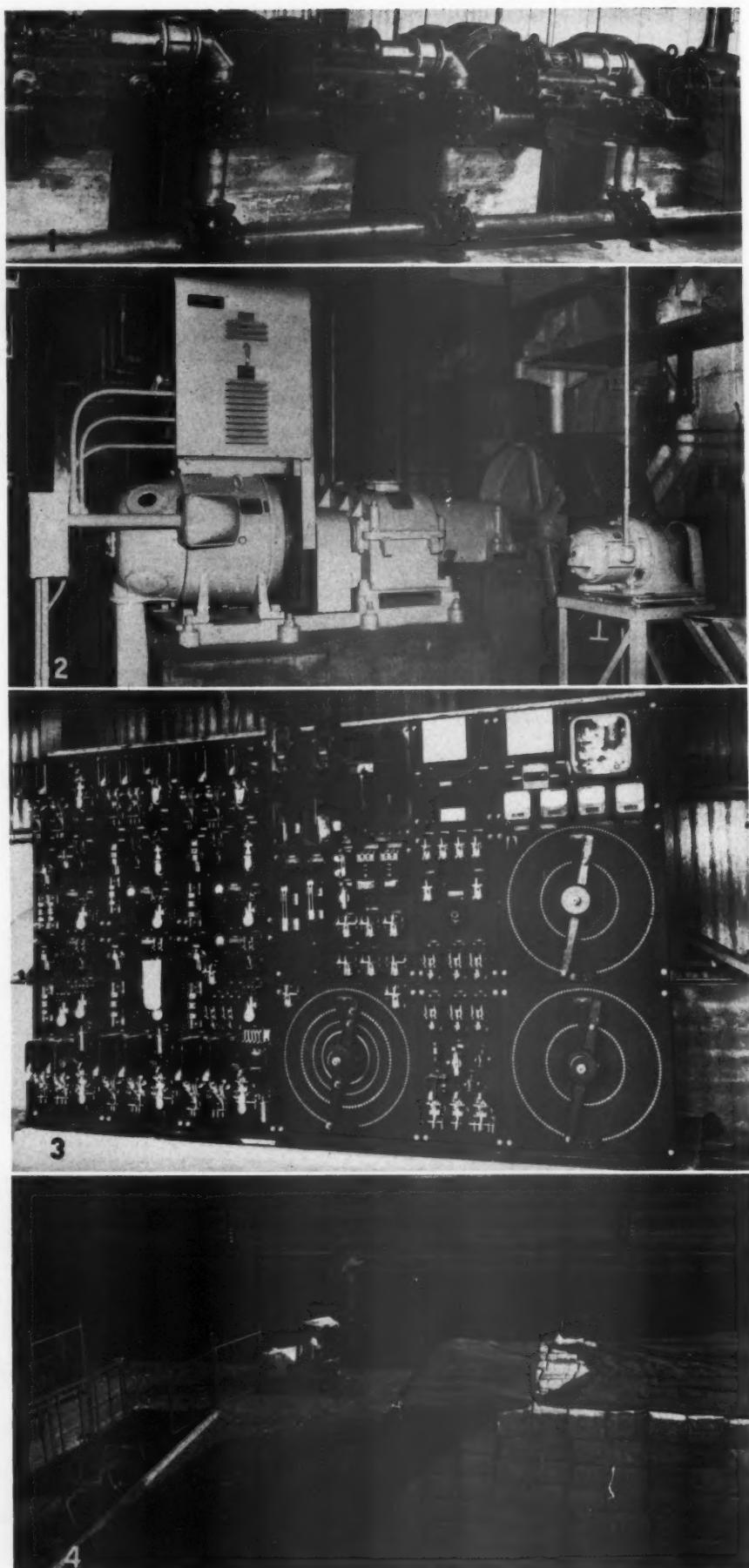
In connection with the boiler a Cochran de-aerating water softener and a feed water heater of the Zeolite system have been installed. C. C. Moore & Co., a Coast-wide firm, engineered these boiler plant installations which involved an intricate interconnection of the new mill and old mill steam supply system.

#### Paper Machine Drive

Reliance Electric & Engineering Co. of Cleveland, O. supplied one of its new sectional electric machine drives for the new 160 inch machine at Fernstrom, from Fourdrinier to reel. A separate 50 hp., Reliance VS "packaged" unit, which has been described in detail in previous issues of this magazine (1947 North American Review Number, page 46; and June 1947, page 24) drives the Cameron rewinder. The paper machine drive installations include a 450 kw. DC generator supplied by Reliance and driven by a 650 hp. turbine from Terry Turbine Co., in Hartford, Conn.

The comprehensive machine drive is so interesting in its detail that **PULP & PAPER** invited J. L. Van Nort, paper mill application engineer of the Reliance company, to provide its readers with a complete description. Mr. Van Nort is widely known for his appearances on industry programs, including the National TAPPI convention in New York.

On page 56 is published a schematic diagram showing the general arrangement



#### EQUIPMENT FOR THE NEW FERNSTROM PAPER MILL in Pomona, Calif.:

1. Morden Stock-Makers—five of them and each driven by 150 hp. General Electric motor—are used in pulp preparation. They are used with Miami jordans.
2. Reliance Electric & Engineering Co. drive for the first dryer, showing how Section Interlock Regulator, providing accurate draw control between sections, is mounted above motor. Reliance supplied sectional electric drive for entire machine.
3. Main control panel for Reliance paper machine drive, with DC power supplied to section motors from variable voltage generator. A wide speed range for different weight papers is made possible.
4. Clark Equipment Co. fork truck in mill yard, which handles baled pulp, stored in the open in this climate, and is seen here transporting paper trim. Note thriving grove of fruit trees beyond the railroad cars, which are irrigated with mill effluent. Sulfite pulp stocked to the right came from Pacific Northwest mills in 400-lb. dry bales.

PAPER . . . America's **6<sup>th</sup>** Industry



## PAPER BAGS FOR "HYBRID" CORN

( NEWS ITEM: A new method of corn culture uses paper bags to control the breeding of each corn plant. )

There's a revolution in the corn belt . . . controlled breeding which results in "hybrid" corn is replacing the old method of corn culture. And one of the first steps depends on a paper bag! As soon as tassels begin to appear, a waterproof kraft paper bag sealed with waterproof glue is tied about the tassel of each plant to collect the pollen which will fertilize a strain of corn that will be identical from season to season. The height and yield of each cornstalk can thus be controlled, resulting in additional cash income and less labor for today's farmer.

Paper bags to package ice . . . paper cans for frozen foods . . . paper tape for recording sound . . . new uses for paper calling for new standards of lightness and toughness, new standards of quality in performance. New responsibilities — new opportunities for the Pulp and Paper Industry.

The Puseyjones Organization is now devoting itself completely to the design and construction of Paper-Making Machinery built to new high standards of speed and efficiency, and to the modernization of existing machines. Additional capacity in Metals Fabrication is now available through conversion of facilities formerly devoted to the building of ships.

Puseyjones Engineers will welcome the opportunity to work with you in solving production problems.

**THE PUSEY AND JONES CORPORATION**  
Established 1848. Builders of Paper-Making Machinery  
Wilmington 99, Delaware, U. S. A.





AMONG TOP PERSONNEL at Fernstrom Paper Mills are (left to right): FRANCIS O. "Nick" BOYLON, Mill Mgr.; JACK D. RHODES, Plant Engineer; DR. ROBERT A. BAUM, Technical Director; DON W. CURTIS, Supt.; E. J. SWANBERG, Production Mgr., and WILLIAM A. McCORMICK, Purchasing Agent.

of the paper machine and the electrical equipment for operating the drive.

Here are Mr. Van Nort's comments: "The drive offers a wide speed range for optimum production of the various weights of paper ranging from tissue to flat paper up to 25 pounds.

"The drive is based on the Reliance variable voltage system whereby DC power is supplied to the section motors from a variable voltage generator. A Terry impulse reaction steam turbine is the prime mover for the main generator set. The unit consists of the turbine, main variable voltage generator, a starting generator, and an exciter. The main generator is controlled by a rocking contact type of regulator and receives its signal from a pilot generator on the master alternator set.

"The purpose of the starting generator is to start each section at a low speed which results in a minimum of stress on the Fourdrinier wire, the felts, and other parts. It also permits any section to be operated at a slow, continuous speed for inching, inspection, or other functions demanding low speeds. Once the section is up to a pre-set speed, it is automatically transferred to the main generator.

"The master alternator set previously mentioned consists of a D-C master motor, a pilot generator, a master alternator and flywheel. The master driven alternator determines the speed of the machine. The purpose of the flywheel is to relate the inertia of the master set to the largest dryer section which, in this instance, is the second section. The rocking contact regulator heretofore mentioned receives its signal from the pilot generator and in turn maintains whatever voltage is necessary on the main generator to assure fixed Master Alternator Set speed. Since the Master set speed is thus held constant, the frequency of the alternator will be constant. This constant frequency is fed to synchronous motors, one in each Section Interlock Regulator.

"The purpose of the Section Interlock Regulator is to provide accurate draw control between sections. The regulator, one for each section, is mounted on top of the motor (as may be seen in accompanying photograph). The motor driving the second dryer section is the 'lead'

motor, and the remaining motors in the range are 'follower' motors. The section regulators which keep in step with the frequency of the master alternator hold the speed change of the light inertia sections to correspond to that of the dryer or 'lead' section by adjustment of the field strength of the light section motors.

Mr. Van Nort continued:

"In order to understand the principle of the mechanical differential on which the regulator operates, a brief description is here given to the unit. The regulator consists of a gear type differential unit with three members associated as follows: The first member is driven by the motor being regulated. The second is driven by the reference synchronous motor through a flat belt and a pair of cone pulleys. The third member of the differential is directly coupled to the moveable arm of a rheostat. As long as the reference and section motor are operating at the same speed, there is no movement of the rheostat arm. When the speed of the section motor varies from that of the reference motor, the arm of the rheostat is moved to bring the motor back to reference speed. Inasmuch as a certain amount of stretch and shrinkage takes place at certain sections of the machine, vernier adjustment in section speed is accomplished by moving the flat belt on the cone pulleys. By positioning the belt properly on the pulleys, a definite deflection between the synchronized section speeds is established and until the operator repositions the belt for the purpose of setting a new 'draw', the section regulator maintains this established relationship. A drum switch on the operator's panel for each regulator enables the operator to remotely control the draw of the section.

"All section motors are 230 volt, D-C, forced ventilated. Gear reducers are separate units.

"The speed of the machine is controlled by varying the generator voltage. 'Fast'—'Slow' buttons, located on the operator's panel control motor operated rheostats which change the machine speed.

"Control panels for each of the sections, the generator and master alternator sets, are of the open type, floor mounted, and grouped together in a single location. The main operator's panel is centrally located to provide ease of accessibility

from all sections (see accompanying picture of control board).

"When tissue paper is being made, a top felt extending from the couch through the second press is employed. Then the speed controls are interlocked to operate as a group with vernier adjustment to vary the individual loads and hence the felt stretch between sections. The control is interlocked so that when the top couch roll is in contact with the main couch roll, the pushbottom on either the couch, first or second press start the three motors as a unit. However, if the top couch roll is in the up position, or disengaged, the first and second presses can be started as a unit with the couch operating independently.

"Dryer sections include dynamic braking control for quick stopping. The calender and reel are capable of being reversed. Slack take-up control is provided to take up slack in the paper after threading the calender.

"A V-S Drive is used to operate a Cameron two-drum winder independently of the paper machine," concluded Mr. Van Nort. "The motor-generator set, exciter, and all control are enclosed in a floor mounted, pressure ventilated cabinet characteristic of the V-S control unit. Dynamic braking for quick stopping, inching for start of windup, wide speed range, are control functions of the drive motor. Remote speed control is provided through a motor operated rheostat. When the winder is stopped, the rheostat automatically returns to the low speed position for start-up."

#### Electrical Distribution System

The problem of electrical distribution is a very important part of the installations at Fernstrom. Because of the long shipment on some of the items involved, General Electric and Fernstrom engineers began planning of the electrical system almost in the very beginning. Here, briefly are the main features of this system the way it was installed.

Provision for electric light and power distribution to the new mill was made through three General Electric transformers, each rated at 750-kva, 12,000/-480 volts, 60-cycles, installed in the main incoming power station located just outside the mill building. Connecting the secondaries of these three transformers

# FERNSTROM'S famous No. 3 — completely equipped with ROSS SYSTEMS



**flat tissue — faster — with  
scientific air handling!**

WHEN Fernstrom Paper Mills, Inc. decided to make their new mill and machine the last word in streamlined efficiency, they included one of the most modern and complete arrangements of Ross Air Systems ever installed.

Ross heating and ventilating, with thermostatically controlled air supply temperatures, machine hood, felt drying, calender cooling, trim conveying — all play an important part in the operation of one of the fastest machines in the world on flat tissue.



**J. O. ROSS ENGINEERING  
CORPORATION**

MANUFACTURERS OF AIR PROCESSING SYSTEMS

350 MADISON AVENUE

NEW YORK 17, N. Y.

201 N. Wells Street, CHICAGO-6 • 79 Milk Street, BOSTON-9 • 9225 Grand River Avenue, DETROIT-4 • 1231 E. Seventh Street, LOS ANGELES-21  
ROSS ENGINEERING OF CANADA, LIMITED, MONTREAL 19, CANADA • CARRIER-ROSS ENGINEERING COMPANY, LIMITED, LONDON, ENGLAND

to the main distribution switchboard inside the building on the mezzanine floor, was installed a 3000-ampere enclosed bus duct.

The main switchboard, manufactured by General Electric, consisted of a 3000-ampere main circuit breaker and two 1600-ampere branch power feeder circuit breakers, with a third branch feeder circuit breaker rated at 225-ampères for the lighting load.

In addition to these main and feeder breakers, there were sub-section main breakers built into the switchgear to make a well balanced, sectionalized circuit design.

This equipment is of the most modern, metal clad, drawout, air circuit breaker design, arranged to afford the maximum protection to the electrical system which it controls.

The lighting system, operating from 120/240 volts, single phase, 3 wire, panelboards, was fed from two 50-kva, dry type, 480/120 240 volt, single phase, 60-cycle transformers, located at points near the lighting load centers.

Attached to the main switchboard and designed to lineup with and match the construction of the main switchboard, are six large synchronous motor starters for the Morden and Jordan drives. These starters are of the automatic, full voltage, full magnetic, remote controlled design, provided with slip-cycle, automatic field application, synchronizing relays, overcurrent and under voltage protection, necessary field control and indicating equipment, all mounted in a totally enclosed, Class I, NEMA enclosure. The five Mordens are driven by five General Electric 150-hp, 0.8 p.f., 440-volt, 60-cycle, 8-pole, splashproof, ball bearing, synchronous motors. The Miami Jordan is driven by a General Electric 250-hp, unity power factor, 440-volt, 60-cycle, 16-pole, 450-rpm, synchronous motor. Excitation for the synchronous motors is provided from one of two 15-kw motor generator sets, the second set acting as a standby unit.

The induction motor load, totalling about 700-hp, consists of approximately 70 motors of all sizes from fractional to 150-hp, and including several reversing and two-speed types. These are used for driving the Hydrapulper, water and stock pumps, vacuum pumps, air compressors, blowers, and etc. The large majority of these auxiliaries is located along the west wall under the mezzanine floor. This concentration of motors was a strong deciding factor in the choice of a centralized motor control center located parallel to and facing the main switchboard on the mezzanine floor just above the main bulk of the motor operated equipment. Such an arrangement thus permitted a large saving in conduit, wire and installation labor over the older method of locating each starter at or near the individual motor.

This control center, known as General Electric Cabinetrol, is one of the largest and most modern of its kind on the Pacific Coast. It consists of about 60 combination motor starters, all of the air break magnetic contractor type with

pushbutton remote control near the motor location. Each motor starter is isolated from all others in its own metal cubicle for the ultimate in safety and fire protection.

Much thought was given to the matter of simplicity and continuity of operation, maintenance, and safety of personnel and equipment, as well as to appearance and economy in capital investment, in the selection of this electrical distribution equipment. The equipment manufacturers coordinated the technical features of the system, such as adequate interrupting capacities, cascade circuit relaying and overall system design and application.

#### Personnel At Pomona

The executives of the company who consulted frequently on this expansion program were, of course, headed by the Fernstrom brothers, who formed the Pomona company back in 1926. An indication of the increased responsibilities in Pomona is the news that Erik Fernstrom, the chairman, who has been making his home in Stockholm and was actively engaged in newsprint and pulp world commerce for many years, is now building a home in Pomona. His brother, Fritz, the president, has lived in the United States since 1913.

J. E. Maurer, vice president and treasurer, who headed the expansion committee, as we stated, is a veteran of 11 years service in this company. He is an engineer, a graduate of California Institute of Technology.

J. W. Genuit, vice president and sales manager, has been actively concerned in planning the marketing of the new products to be made by the company and to advise with the staff on the necessary equipment to make these products.

William A. McCormick, purchasing agent, who developed a follow-up system for purchasing orders which was most effective in speeding up the projects, is a veteran p.a. of 20 years experience in Southern California, having been with Fibreboard in Los Angeles up to 1946.

E. J. Swanberg, production manager, has been with the company since 1930.

Heading the mill operating organization are operations executives who are especially experienced in high speed production. Francis O. "Nick" Boylon, new mill manager, joined the company in Nov. 1947, after 13 years with Scott Paper Co., most recently as production manager at Fort Edwards and Glen Falls, N. Y. He is a Michigan graduate.

Don W. Curtis, superintendent, was at Scott mills—Fort Edwards, N. Y., and Chester, Pa., and he had considerable experience on fast machines in the east. He came to Pomona in December, 1947.

Jack D. Rhodes, plant engineer, participated in all consultations and had charge of actual installations. He is a wartime U. S. Navy veteran and was former master mechanic at Ecusta Paper Corp., Pisgah Forest, N. C.

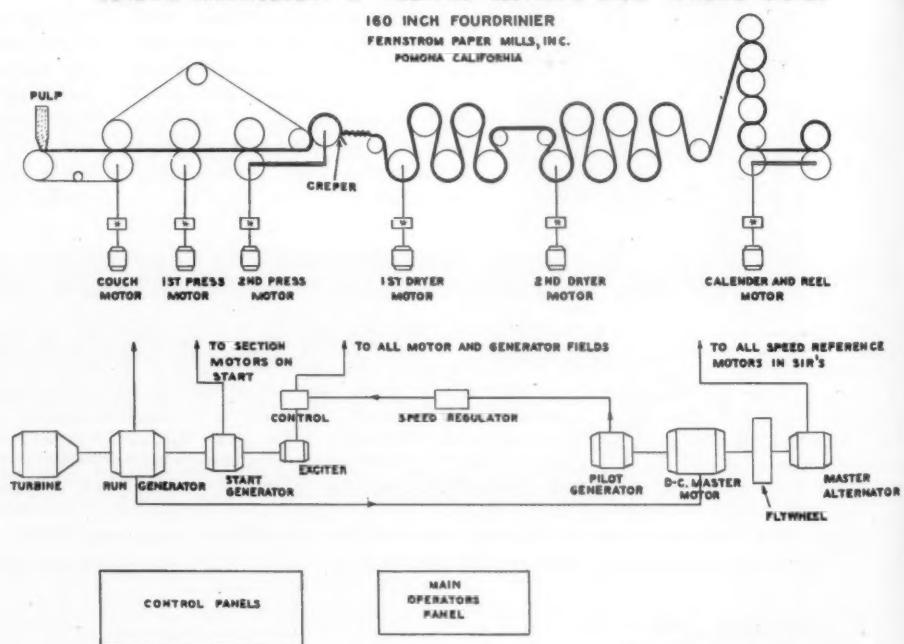
Dr. Robert A. Baum, technical director, had an important role in developing the process layouts and control systems for the new mill. He is a University of California graduate and a ten-year man at Fernstrom.

Stanley Adams, the chief chemist, was right-hand man to Dr. Baum in much of the important technical work.

Robert Ashley, office manager, and Fred Scrimes, assistant secretary, also had special duties in connection with accounting and preparation of stock issues, etc.

Mr Maurer, generously giving credit to representatives of equipment com-

#### GENERAL ARRANGEMENT OF RELIANCE SECTIONAL DRIVE - HARLAND SYSTEM

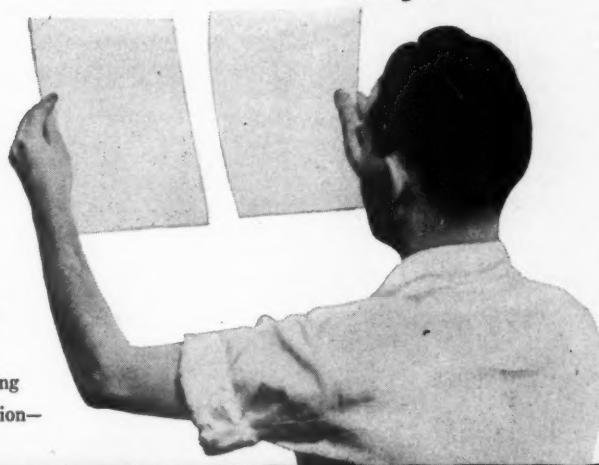


CONTROL PANELS

MAIN OPERATORS PANEL

GEAR REDUCER AND SECTION INTERLOCK REGULATOR

quality formation appearance



If high grade sheets are to have the quality, formation, and appearance to meet consumer demands, Aluminum Sulfate of consistent purity and uniformity is vital in their manufacture. General Chemical's Aluminum Sulfate and other paper-making chemicals are made under constant laboratory control with strict attention given to every production detail. That is why so many leading paper mills who want to be sure of their selection—

## SPECIFY "GENERAL CHEMICAL"

### ALUMINUM SULFATE

**Standard**—Ground, 99% thru 8 mesh, 95% thru 10 mesh; Powdered, 95% thru 100 mesh; Lump.

**Iron Free**—Ground, thru 8 mesh; Lump, approximately 2½".

**Liquid**

### SODIUM SILICATE

Solutions: From 38°-60° Baume  
Wt. Ratio (Na<sub>2</sub>O to SiO<sub>2</sub>)  
from 1:2.00-1:3.40

Appearance: Opalescent to Clear

### OTHER PRODUCTS OF GENERAL CHEMICAL FOR THE PAPER INDUSTRY

Glauber's Salt (Crystal and Anhydrous)

Tetrasodium Pyrophosphate (Anhydrous)

Sulfuric Acid

Sodium Bisulfite (Anhydrous)

Sodium Hyposulfite

Nitric Acid

Sodium Sulfite (Anhydrous)

Sodium Sulfide

Salt Cake

Hydrochloric Acid

Chromium Potassium Sulfate (Potash Chrome Alum)

Sodium Metasilicate

Aqua Ammonia

Trisodium Phosphate

Sodium Fluoride

Copper Sulfate

Disodium Phosphate (Anhydrous)

### GENERAL CHEMICAL DIVISION ALLIED CHEMICAL & DYE CORPORATION

40 RECTOR STREET, NEW YORK 6, N. Y.

**Offices:** Albany • Atlanta • Baltimore • Birmingham • Boston • Bridgeport • Buffalo  
Charlotte • Chicago • Cleveland • Denver • Detroit • Houston • Kansas City  
Los Angeles • Minneapolis • New York • Philadelphia • Pittsburgh • Portland (Ore.)  
Providence • San Francisco • Seattle • St. Louis • Wenatchee • Yakima (Wash.)

In Wisconsin: General Chemical Company, Inc., Milwaukee, Wis.

In Canada: The Nichols Chemical Company, Limited • Montreal • Toronto • Vancouver



# GREEN BAY SPRING MEETING

panies which gave counsel and engineering assistance; mentioned Joe Hagan of Black-Clawson Co.; Tony Agronin of Shartle Bros.; Harry Moore of Beloit; C. W. Morden of Morden Machines; Jack Boren, sales engineer, and Don Carson, installation engineer, for General Electric; Howard Latta, and Bob Wesener, representing Reliance Electric and Engineering Co.; A. E. Montgomery, vice president of J. O. Ross Engineering Corp.; G. H. Young of Midwest Fulton Machine Co.; H. A. Earle of Mason-Neilan Regulator Co.; Paul Boronow of Valley Iron Works; C. C. Moore & Co., engineers for the boiler plant; W. B. Dyer, engineer of Southwestern Engineering Co., of Los Angeles, who designed the building and foundations; Wes Munger, Black-Clawson expeditor; F. F. Frothingham, Bird Machine Co.; A. S. Quinn vice president of Stebbins Engineering Corp.; Thomas Mc-Kendrick, electrical installation contractor; and Kenneth Young of Terry Turbine Co.



RECENTLY HONORED BY CROWN ZELLERBACH CORP. were the following men for their long terms of service with the San Francisco headquarters' division of the company: A. VAN DER ZWIJP, 45 years service; R. T. FAIRWEATHER, 40 years; J. G. VOLLMAR, 35; S. L. LEAVICK, 30; J. P. TOWEY, 30.

## Appleton Engineer Patents Drying Machine

A patent for paper drying apparatus was issued recently to Marin Phillips, 527 N. Wood St., Appleton, Wis., and the commercial rights were assigned to the Appleton Coated Paper Co., where he is employed as a power engineer.

In the machine, the paper is conveyed through the drier in loops suspended from horizontal sticks. By an automatic arrangement, the passage of successive stick loads is retarded until the preceding stick has reached the correct position. Application for the patent, pending since 1943, was approved as to six claims of originality and improvement.

## Badger Globe Mill Earns Safety Award

Badger Globe mill of Kimberly-Clark Corp., Neenah, Wis., recently received an award for outstanding performance in safety in the state of Wisconsin in 1947 from the Wisconsin Council of Safety. The accident frequency of the mill was reduced from 6.85 in 1946 to 3.1 per million man-hours in 1947.

Clayton Cummings is chairman of the Badger Globe safety committee. Other members include these superintendents: Bernard Nobbe, manufacturing; Fred Hollinbeck, Gordon DeCoudres, industrial engineering; Gordon Schanke, finishing; Leo Madison, materials department; Harold Terin, mill office; Chester Halverson, technical department; Les Johnson, planning department; Howard Palmer, assistant mill manager, and Robert Wood, personnel department.

A symposium on pitch, an acute problem in some mills, jam-packed an entire morning session the final day of the spring meeting of the Northwestern Division of the Superintendents' Association, in Green Bay, Wis., on June 18 and 19.

Representatives of several of the mills in the area presented briefs of the problem as it exists in their individual mills.

Experience varied. Some of them actually contradict older established concepts. One of the amusing and yet serious conditions brought to light was the fact that pitch difficulties did not reappear consistently upon discontinuing the use of a pitch control agent. Rather production went on for some time without any further pitch difficulty. Just why such a condition obtained was not known.

Mace Harris, manager of pulp manufacturing, The Northwest Paper Co., Cloquet, Minn., was moderator of the entire session. L. S. Sabatke of Marathon Paper Corp. was program chairman and F. X. Kreiling, Thilmany Pulp & Paper Co., was general chairman.

At luncheon, Louis McNamara, director of industrial relations, Rhinelander Paper Co., discussed labor problems.

The afternoon was given over to three papers: "Correcting Some Flat Screen Problems," by Don Calkins of Wausau Paper Mills, and two papers on "Some Recent Developments in Kraft Mill Recovery," T. T. Collins, Jr., and P. H. West, of Thilmany Pulp & Paper Co.

## Flat Screen Problems

In discussing the steps taken by one mill in correcting the problems of dirt, inadequate capacity and high operating cost in pulp cleaning, Mr. Calkins of Wausau Paper Mills, explained the program was divided into the same four parts as the cleaning system itself: knotting, riffling, primary screening, and secondary screening. He continued:

"A new consistency control unit and two knotter screens of the vibrating type were installed in place of the existing flat type of knot screens. The riffler was replaced with five new units, each eight feet wide, with felt-lined bottoms. In the riffler installation, capacity enough was provided so that one unit could be shut down and cleaned or repaired, without loss of production.

"In remodeling the primary screens, one line was taken at a time and there was little or no loss of pulp production during the construction period. The changes on the knotters, rifflers, and secondary screens had all been completed before work was started on the primary units, so the dirt problem did not get any worse than it had been.

"All of the wooden work on the screens was removed, and the necessary repairs to cans, toe blocks, bearings, etc., were made. Then the screens were reset, using only two 12-plate units, or a total of 24 plates, for each line. In resetting, a space was left between the existing wall and the head end of the first screen, and between the two screens themselves.

"At the entrance end of each line of screens, a head box with an apron board was installed. Its purpose was to level off the flow before it reached the first screen plate, and to make that flow laminar in nature. The box was designed so that the stock entrance was below the

point of discharge, and it had two vertical baffles in it. Since the last pass in the box is a rising one, it has a tendency to float the large dimension speck materials. With the dirt at the top of the stream, the slot sizes of the first few plates can be greatly increased to give greater screening capacity, without fear of increasing the dirt count.

"After the pulp has passed over the first 12 plates, it has been reduced somewhat in volume, and the consistency has been increased. With this in mind, a dilution well with an apron board was installed between the two screens. This dilution well is nothing more than a pit or recess below the screen plate line, and all of the dilution water is added from the bottom of the stream. The dilution of water in this manner has a tendency to lift the speck material to the surface, the same as at the head box. The apron then levels off the flow before it reaches the thirteenth screen plate.

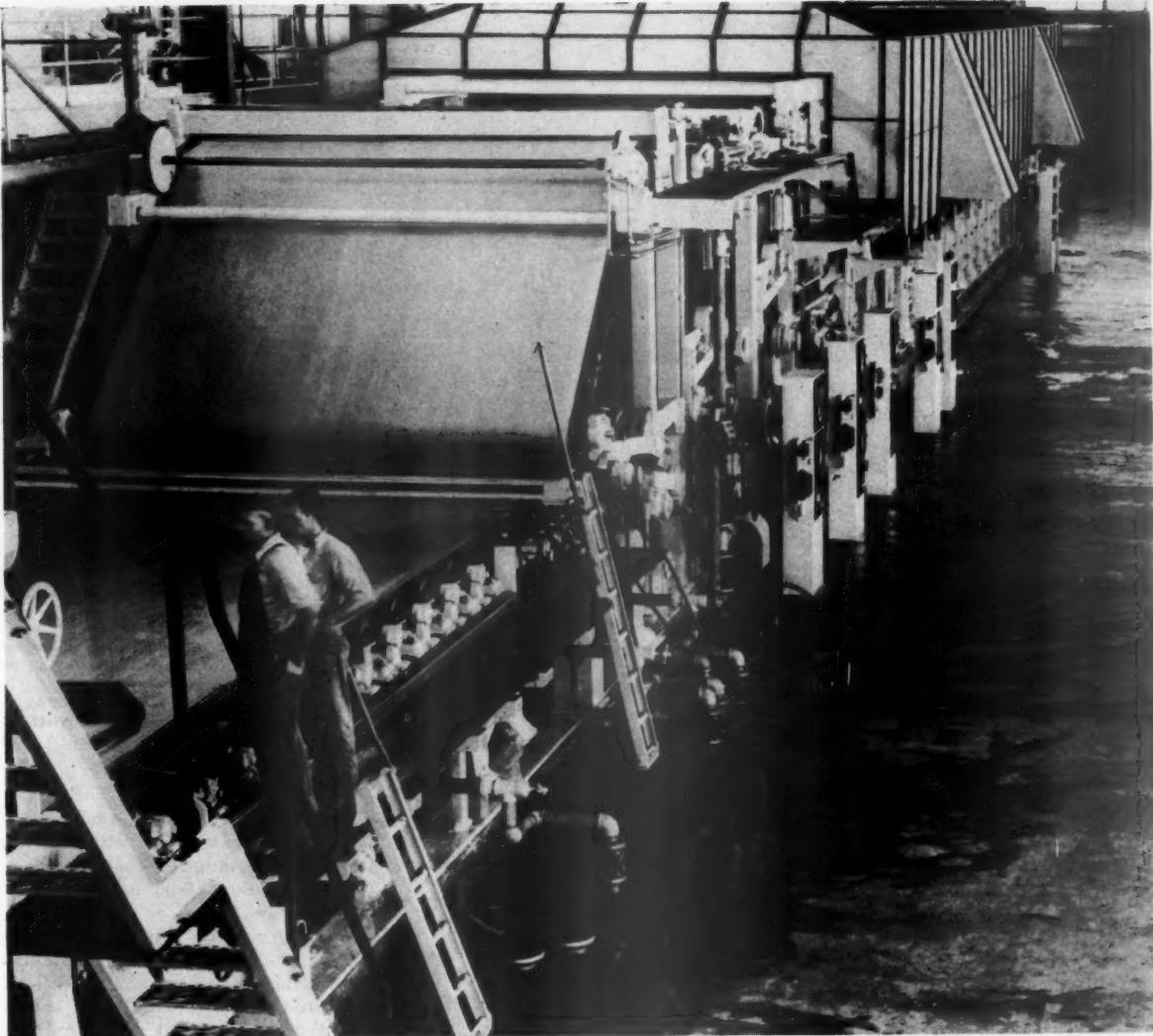
"During normal operation, the stock entering the screens, plus the dilution water added at the dilution well, is volume enough so that a stream passes over the 24th or last screen plate in the line. This prevents any drying up and pounding on the screen plates. The stock which flows over the tail end is not lost because it is sent to the secondary units for further stock selection.

"Before rebuilding, the screens had diaphragm chambers for each pair of plates that were about nine inches deep, and each chamber had an outlet that was from 20-30 sq. in. in area. The depth was reduced to a little over six inches in remodeling. Since the chamber outlets were an integral part of the screen frames, and could not be made larger, it was necessary to block them off entirely. New outlets were cut out through sides of the chambers, and they were made twice as large, or 60 sq. in. in area.

"Oblong metal castings in the shape of a reverse curve were then connected to the outlets, so that the point of discharge was approximately 20 inches below the top of the screen plates. The cross sectional area of these metal conductors was maintained at 60 sq. in. The lower ends of these reverse curve castings were connected to the bottom of a collecting flume with individual seal chambers for each pair of plates built into it. These seal chambers were nothing more than rectangular compartments having a horizontal cross sectional area of one hundred square inches. A dirt trap was provided at the bottom below the stock entrance, and a dam built up almost to the top of the chamber established the point of discharge. The tops of the dams were built up of thin strips, and once the stock level for proper operation was determined, the dams were fixed. During operation the stock discharges over these dams into a common flume, and then to accepted stock storage. Because there is no adjustment of the dams required, the collecting flumes were covered with a tight fitting, but removable, cover.

"The drives on the old installation consisted of one motor for each two rows of screens, and transmission was through V belts to the first line, with a flat belt driving from there to the second line. It had been proved that this was a difficult setup to work around, and was not flexible enough, because a single line of screens could not be shut down. The drives were changed to individual direct connected gear motors with shock absorbing couplings between the gears and the first screens. This change provided greater flexibility, and a great deal more room.

"The secondary screens were installed in two lines of 24 plates each. One line was adequate for the necessary capacity, but a second line was provided to give greater flexibility of operation. These screens were built in the same manner as the primary screens, except for a



## The Evidence Accumulates

The highly satisfactory start-up of the new Fernstrom machine affords further evidence that it pays to pre-erect for check and matching of parts prior to shipment.

Evidence that it is to the advantage of mill builders to contract with Black-Clawson for

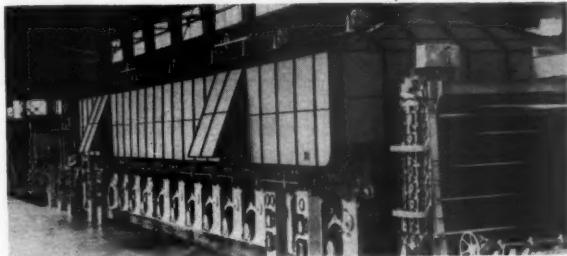
all equipment required is also accumulating.

Hydrapulpers, stock cleaning equipment, HYDRA-FINERS, Jordans, pumps, agitation and converting equipment, as well as for the paper machine itself.

Many contracts have been handled by B-C-S-D in the past and the practice has very definite advantages.

*"Everything for the Paper Mill"*

Divisions: SHARTLE BROS. MACHINE CO., Middletown, Ohio DILTS MACHINE WORKS, Fulton, New York THE BLACK-CLAWSON CO. (ENGLAND) LTD., Morden, England  
Western Sales Office: R. T. Petrie, Mayer Bldg., Portland, Oregon Associate: Alexander Fleck Limited, Ottawa, Canada



AUGUST, 1948

**Black-Clawson**  
HAMILTON, OHIO



HERE IS GENERAL VIEW OF SYMPOSIUM on "Pitch" during spring meeting of Northwestern Division of Superintendents Association at Green Bay, Wis. The individual pictures below show some of the principal participants in that meeting. Left to right, below, are: FRANK X. KREILING, Thilmany Pulp & Paper Co., who was General Chairman; MACE HARRIS, The Northwest Paper Co., Moderator of the session on pitch; SIGGE EKMAN, Rhinelander Paper Co., past Division Chairman;

change in the accepted stock flow box. It is desirable to operate dry plates at the tail end of secondary screens, so that stock losses can be held to a minimum. To do this, a removable dam was put in the flow box, so that the stock which passes through the dried up plates can be separated from that which comes from completely submerged plates. In operation, the stock passing through the wet plates is accepted, and that which comes through the dried up plates is sent back to the head of the line for rescreening.

"When the rebuilding program that this particular mill undertook was completed, all of their original problems and difficult operating conditions were partially or completely satisfied. The results can best be summarized by reviewing the original problems mentioned previously in this paper.

"The dirt in the screened pulp was very substantially reduced, and was no longer a serious problem.

"A combination of several factors increased the capacity of the screening system very materially. Larger chamber outlets, proper delivery of stock to the first few plates, the use of larger slot sizes, and the use of some stainless steel plates all contributed to this increase. Where it had been difficult to operate at an 80-ton per day rate before, it is now possible to screen at 110-ton per day rate on five of the six lines of screens. Perhaps a little better comparison of this capacity increase would be to mention that it previously required 216 primary screen plates to screen 80 tons, and it now requires only 120 primary plates to screen 110 tons. This increased capacity allows the screen room to do their wash-up and repair work during operations, and without a slowdown of production.

"Screen plate replacements, repair costs, power consumption, and wash-ups during normal operating hours, seem to indicate that there will be a permanent reduction in operating costs."

**CONTINGENT UPON POWER DEVELOPMENTS**, Manitoba's minister of mines and natural resources recently forecast in the provincial legislature that new pulp and celanese industries might be launched.

### Europe's Demand for Pulp Growing; Paper Demand Firm

Karl A. Clauson, secretary of the Association of Pulp Consumers, 385 Madison Ave., New York, was busy this past month reporting to groups of APC members in the Midwest on his recent extensive trip to the European continent and to Sweden. Prior to this he had reported to members in Pennsylvania, New York State and New England.

Mr. Clauson returned late in June after a seven weeks tour of England, France, Holland, Sweden and Germany. Before leaving Europe he had conferred with the U. S. Embassy and Bizonia personnel. Purpose of his trip was to study the market situation abroad and to present to the Europeans the problems of American pulp consumers.

Essence of his message to non-integrated U. S. mills was that European demand for wood pulp is growing. England and Bizonia are eager and able to buy perhaps 125,000 tons more than last year. Indications are that North and South America will buy substantially less pulp from Europe than last year at present price levels. And, believes Mr. Clauson, present paper demand will continue firm with the aid of ERP and defense appropriations.

### Break in Swedish Prices

In June there were 5,000 tons of European unbleached kraft available to buyers at \$140 per ton—\$7.50 below the market price. Although the Swedish mill offering this tonnage was not a member of the Swedish cartel, nevertheless this

RICHARD M. RADTSCH, Appleton Machine Co., who presided at final dinner; LOUIS McNAMARA, Rhinelander Paper Co., who discussed labor relations, and (in separate individual picture) C. M. KOON, Munising Paper Co., photographed while speaking in pitch symposium. In the general view, at extreme left of front row is VERNON TIPKA, Bird Machine Co., and at extreme right (facing group, but seated) is WILLIAM SCHLAFGE, Minnesota & Ontario Paper Co.

marked the first break in firm Swedish prices in a long time.

However, there had been signs of resistance against European prices. Some sources indicate that at least 50% of orders for Swedish pulp in the second quarter had been cancelled. The Finns were running into trouble on their third quarter prices and cancellations were said to be running from 50 to 75% of the total orders, while informed sources stated that the demand for Scandinavian pulp, at present price levels, might drop from 150,000 to 200,000 tons.

Reasons for this, in addition to the price, were: (a) Increased receipts of Southern kraft plus other pulps; and (b) Curtailment of some non-integrated operations, due to the high cost of pulp.

### New Kimberly-Clark Machine

First large showing of the new No. 2 creped wadding machine built according to special Kimberly-Clark design by Beloit Iron Works took place on June 24 at the K-C Lakeview division at Neenah, Wis. About 1,000 employees and their families went through the mill.

This machine, in operation about a year now, is the most advanced creped wadding equipment, according to J. C. Wollage, mill manager, and it is identical with two other machines of this type installed last year in the Memphis division of Kimberly-Clark.

### BAG MACHINE ADJUSTER

Excellent opportunity for top notch man, experienced with specialty paper bag machines, Aniline Printers; plant located in Southwest. State all details in first letter. Age, experience, salary required. Reply Box No. 15, Pulp & Paper.

*out with Rivets*



Method and ease by  
which knife may be as-  
sembled. Eliminates all  
rivet trouble.

*and no more rivet trouble*



O-KNI-CO-LOK dis-assembled.  
Ordinary slitter knife is in cen-  
ter. Note small button on the  
O-KNI-CO-LOK which fits into  
any rivet hole on slitter knives  
of this type.

Only seconds are required to assemble or dis-  
assemble the new O-KNI-CO-LOK slitter! These two opera-  
tions are completed by means of a spanner wrench.

The projecting button shown on the O-KNI-CO-LOK above,  
slips into any of the holes designed for all rivet type slitters.  
Knife is held firmly in place and locked to the shaft. Nut  
continues to tighten as assembly revolves.

Order your O-KNI-CO-LOK slitters today and save time and  
money. Immediate delivery!

Manufacturers of: TRIMMER, REVOLVING CUTTER, CHIPPER and SLITTER KNIVES

**The OHIO KNIFE Co., CINCINNATI, OHIO**

AUGUST, 1948

61

THE OHIO KNIFE CO., CINCINNATI 23, OHIO  
No. 12  
Gentlemen: Please send me, without obli-  
gation, specific data on O-KNI-CO-LOK for  
Slitter Knives.

COMPANY \_\_\_\_\_  
NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_

# Increased Production THROUGH USE OF WAGE INCENTIVES

By Harold V. Brady

Executive Committee Chairman of Board of Directors of Ryegate Paper Co., East Ryegate, Vt.

If your machinery and auxiliary equipment has the capacity, it is possible that you may be able to attain a production increase of as much as 30% through the administration of a carefully designed, simple, wage incentive. It has been done.

It is the writer's opinion that there are many pulp and paper mills which are not operating right up to the capacity of their pet bottle neck. Even those mills which attain capacity production from time to time, or on occasions, would certainly enjoy period averages closer to the mill capacity than those now on the records.

Papermaking has long been regarded as one of the arts, and although improvements in machinery and new operating techniques have had a most marked effect on the history of the industry, it cannot be denied that there is still an art to making paper, and that the human element still plays a large part in our industry today. This not only applies to the skilled paper machine crew, but to the grinder operators, the maintenance men, the boiler house workers, and right through the mill even to the employees engaged in the so called non-productive services.

Due to the very nature of the pulp and paper industry, which is characterized with fixed charges and a relatively small number of production units, it is imperative to the success of the organization that these production units operate at near capacity continuously with an absolute minimum of lost time, consistent with good preventative maintenance.

In order to accomplish this, all departments; all individual workers must function as a team, well-organized, and with a propensity to develop better individual and group techniques, and positive motivation for exercising care and good judgment in their work. All employees have some degree of natural motivation which may be attributed to such factors as ego, combativeness, satisfaction for accomplishment, competition between fellow workers, desire for praise, ambition for job advancement, apprehension for job security, and others. There is no question, however, that the opportunity to increase earnings provides a very effective and universal stimulus. This has been recognized for many years by industrial management, and since the latter part of the nineteenth century there have been many schemes and plans developed by numerous industries in an attempt to provide a wage stimulus or incentive to increase production quantity, quality, or both.

In some industries the incentive or piece rate systems of wage payment are so inherent that they may be regarded as

MR. BRADY, author of this article, reports very successful results from the wage incentive plan now in operation at Ryegate Paper Co.



## ABSTRACT

This paper is concerned with a proposal for a wage incentive plan which the author describes as simple, direct and particularly adaptable to the pulp and paper industry. He describes wage incentives as a powerful motivation to aid the achievement of above standard production in quantity and quality.

There are many wage incentive systems and piece rate plans in operation today, but they have been mostly confined to the manufacturing industries where individual or small group performance is important and can be easily measured. Many of these plans are complicated, dangerous, and often meet with labor controversy, says Mr. Brady. A few of the best known types of incentive systems are noted and the predominant disadvantages are pointed out.

The uniqueness of pulp and paper as a process industry is discussed from the viewpoint of the application of a wage incentive. The author intimates that a production increase of up to 30% may be attained depending upon the actual capacity of the equipment, and a tried and proven plan is described in example form.

definite wage policies rather than systems of wage payment. A study of the various types of wage plans, which have been operated successfully shows that they and their many modifications have been designed essentially for the industries where individuals or small groups are responsible for units of production, such as the garment workers trade or in the manufacture of machines or machine parts. While most piece rate wage plans stimulate the workers motivation for production and provide the manufacturer with a constant unit cost for labor, they are generally very dangerous and difficult to set into motion since they require an accurate establishment of production standards, an adequate or comparable flow of materials to the workplace of all employees, and often more supervision is required in order to maintain quality standards. Other limitations of piece rate plans concern employee's morale as a result of wide differences in individual earnings, a tendency to disregard employee's health conditions, and the tendency for management to raise the stand-

ard production rate when earnings are high to bring piece workers' wages to a closer approximation to that of time paid employees.

Naturally, in the process industries there are very few operations where a piece rate system of wage payment to individual workers is practicable. This is probably the most important reason for the paucity of wage incentive systems in the pulp and paper industry. There have been some piece rate plans adapted to maintenance workers, but they require detailed and accurate time studies in order to set the standards, and the record keeping and administration of such programs are usually unwieldy.

Employee stock ownership, profit sharing plans, and others of this category are, of course, applicable to most all industries, but generally speaking they have distinct disadvantages which make them undesirable. Employee stock holders risk a repetition of stock losses which occurred in 1929 when this system was in widespread use. Stock ownership plans are ineffective during a declining market, and during normal times the benefits from this type of plan are so remote that the incentive value is often lost. Profit sharing plans are also of such a nature that it is doubtful how much incentive is actually carried over into day to day work. In addition to this, it is questionable whether employees can or care to comprehend the nature and distribution of corporation profits.

## Proposes Straight Premium

The writer proposes that the most effective wage incentive plan applicable to the pulp and paper industry is a simple straight premium on total regular wages actually earned. This is probably best expressed as a per cent of the employee's total of straight and overtime wages for each week. The per centage premium or bonus to be applied is predetermined in correlation with production achievements by the individual mill in question. The determination of this correlation requires extreme care in order to make the incentive fully effective. If the scale for bonus production is set too high, or too difficult to achieve, the workers soon lose interest in the possibility of "reaching the moon". On the other hand, if the scale is set too low, or too easy to attain, it is soon felt that the bonus is practically part of a wage increase and the effect of the incentive is soon lost. The beginning of the bonus scale should be set at or just slightly above the standard production rate so that premium wages start

(Continued on page 66)

n

ngs are  
es to a  
ne paid

lustries  
here a  
ment to  
This is  
on for  
ems in  
e have  
ted to  
require  
ies in  
record  
h pro-

shar-  
ry are,  
ndust-  
have  
them  
und-  
risk a  
urred  
wide-  
as are  
t, and  
from  
at the  
shar-  
e that  
s act-  
work.  
nable  
impre-  
of cor-

most  
icible  
simple  
wages  
st ex-  
ploye's  
s for  
or  
ed in  
ments  
The  
quires  
incent-  
onus  
diffi-  
lose  
g the  
scale  
it is  
cally  
ct of  
ning  
t or  
duc-  
start

PER

**Tighten UP on WASTE**



with

**SVEEN-PEDERSEN**

**-FLOTATION-**

**SAVEALL**

**SAVE**  
FIBER, FUEL  
WATER, CHEMICALS  
**SOLVE**  
STREAM PURIFICATION  
PROBLEMS

Write For



this FREE  
brochure

Sveen Pedersen Flotation Saveall saves you more money by recovering more fibers and fillers than the conventional type savealls. Sveen Pedersen clarifies the water to such a high degree of purity that it can be extensively re-used in the system. Fresh water and fuel consumption are greatly reduced and steam improvement problems virtually eliminated.

**Other Advantages of Sveen Pedersen**

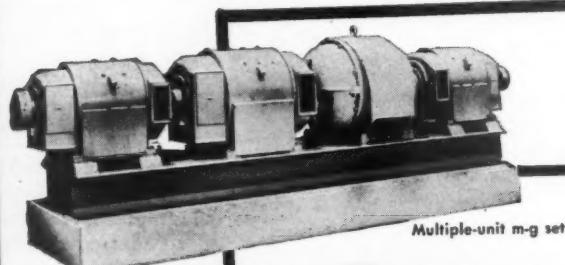
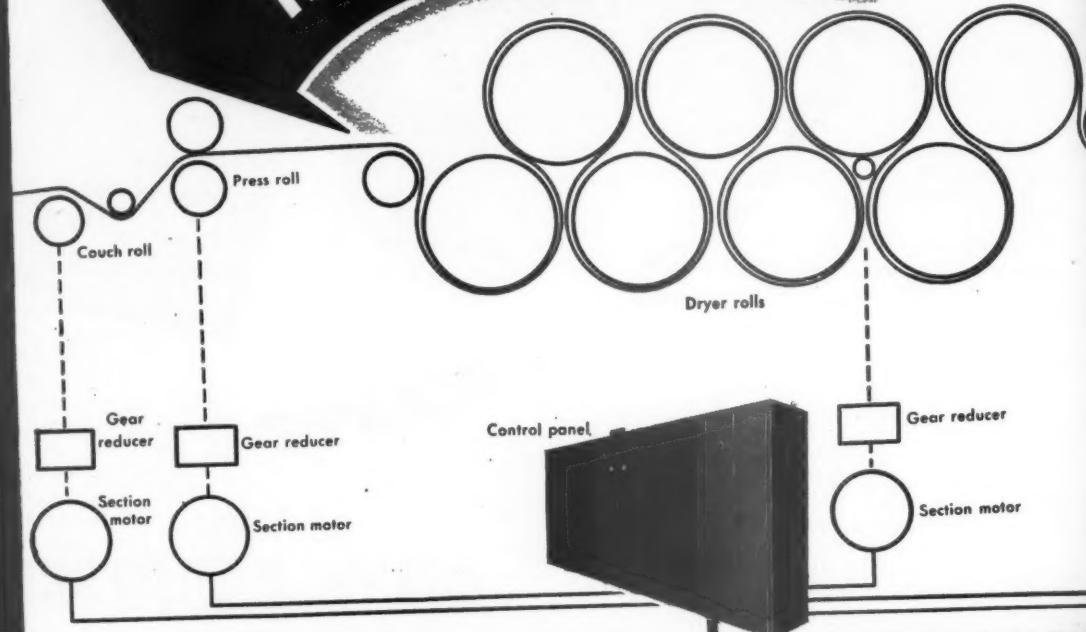
*Low maintenance cost • Rapid Circulation through the System • High Efficiency on Heavily Loaded Stock • Insensitivity to Ordinary Fluctuation in White Water Flow • Ease of Cleaning*

**BULKLEY, DUNTON PULP CO., INC.**  
295 MADISON AVENUE, NEW YORK 17, N. Y.

In Canada: **ALEXANDER FLECK, LIMITED**  
416 WELLINGTON STREET, OTTAWA, ONTARIO



Precision control  
from the start...



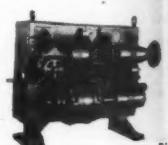
A-C POWER



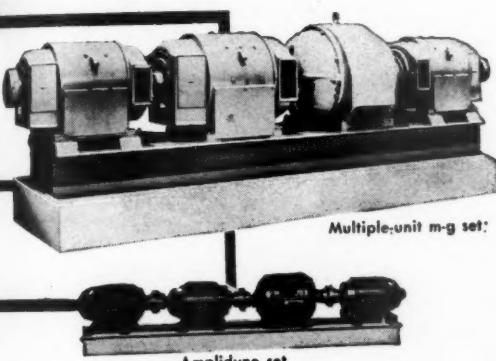
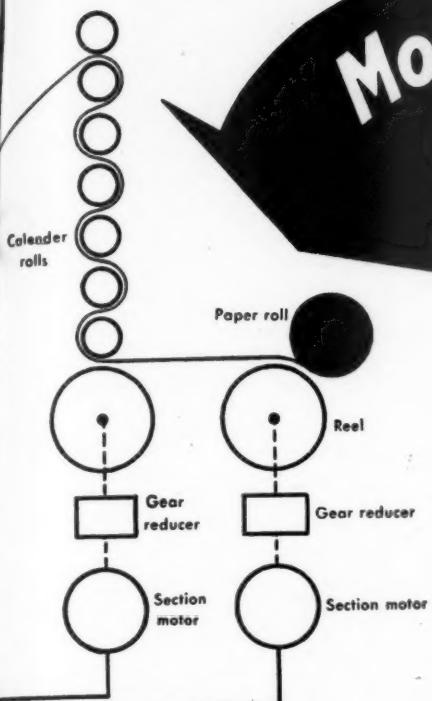
**OUR HAT'S OFF TO A GREAT RECORD**

You can be justly proud of the progress of the paper industry to step position today as one of the country's six leading industries. The man modernizing your machinery, including your electric equipment.

How this foresighted program of electrical modernization has paid off is shown by the results. The more dollars you have invested in your paper-mill electric equipment, the more your machine speeds have increased. This in turn has led to your industry's present high tonnage figures.



# More output on the reel!



**G-E multiple-generator sectional drive accurately holds draw between sections regardless of load changes—helps you get higher speeds, reduced broke, more "bull's-eyes" on the reel.**

With the G-E multiple-generator sectional drive, the over-all speed of your paper machine is easily adjusted from a central point at the master control panel. Breaks, slack, or weaving at the reel are reduced to a minimum because the precision and speed-of-response of the electronic-amplidyne system accurately holds draw *regardless of load changes*.

Basically, this drive is simpler than the common generator system—easier to operate and understand. The starting generator and its complicated switching are eliminated. Slack take-up for each section (except the couch) is provided from a simple push-button control. All guesswork is eliminated from draw adjustment because section speeds respond immediately and accurately. Tension control—pioneered by General Electric—prevents the accumulation of excess tension on the calender and reel sections.

A new bulletin has been prepared describing this modern development in sectional paper-mill drives. Write today for Bulletin GEA-5036. *Apparatus Department, General Electric Company, Schenectady 5, N. Y.*

**RECON**  
We at General Electric are proud of our part in your growth. Step by step, we have kept pace with your industries. Demands for more efficiency by pioneer in constant consulting with you in the improvement of paper-machine drives. Here reproduced, for example, are a few G-E "firsts" that have met early and recent needs of the paper industry.

In 1920 G.E. developed the first successful speed regulator for sectional paper-machine drives (Fig. 1). Of the synchronous

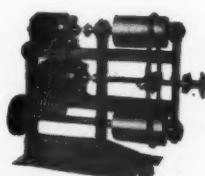


Fig. 2

dynamometer type, it superseded the G-E sectional drive of 1909 which used mechanical speed changers for draw. Then came the selsyn regulator (Fig. 2) in 1928, the same year when G.E. began experimenting on electronic speed regulators. Finally there is the modern electronic-amplidyne type of regulator (Fig. 3) which, together with the multiple-generator system, has demonstrated its remarkable performance since 1946.

To meet your future needs as we have in the past, G.E. will continue to develop and produce the finest in electric equipment for the paper industry.



Fig. 3

**GENERAL  ELECTRIC**

668-81

immediately for above standard production. The top of the scale may be set at the known capacity of the equipment, although it is not necessary to establish a precise top to the scale if the increments are constant.

The determination of the standard production rate is a job for the management in each particular mill. Generally, the best basis for this determination is the past production records during periods of normal operations. Where production programs call for the manufacture of various grades of paper, a standard may be determined for each grade and then the actual production for each grade converted to the base which is used for the bonus system. The base should generally be established from the conditions of the most predominant product. If the variation of products is only slight, such as minor changes in basis weight, the production for bonus purposes may be calculated back to the standard conditions without the necessity of setting individual standards for the product variations. For example, if the base for the standard is paper at 32 pounds basis weight, the production of 100 tons of paper at 36 pounds basis weight would be equivalent to 88.8 tons by straight proportion. Of course, it is not strictly correct to use a straight proportion for these calculations due to changes in operating conditions at various basis weights, so it must be left to the individual mill to decide if the variance in operating conditions is enough to justify separate standards.

Due to the relatively low labor cost factor as compared with other industries, that is the proportion of wages to other elements of cost, the paper mill finds itself in a good position to pay bonus wages for increases in production. Besides the relatively low labor cost, production increases result in considerable savings from fixed costs so that the mill can afford to pay bonus wages in amounts adequate to create a real incentive among all workers. The proposed plan calls for passing a percentage of these savings back to all employees with the exception of administration and management (who usually receive compensation for achievement through other channels). Most mills will find that the employees who should be included in the bonus plan will consist of those on the weekly payroll. By including all employees in the bonus plan we are showing cognizance of the fact that the machine crew alone cannot control production, but that it requires the co-ordination and cooperation of all working units throughout the plant to achieve smoother operations and increased production. This policy also avoids individual differences in methods of wage payment which, in turn, eliminates a frequent source of friction between employees.

Let us now consider a simple illustration of how the proposed bonus system might be applied to an hypothetical paper mill by assuming a two machine mill has a normal average production of 100 tons per scheduled operating day of 24 hours. Chances are that careful studies will reveal possibilities for increased efficiencies or increased speeds on both machines

### An Editorial Note

Ed. Note—The author of this article reports very successful results from the wage incentive plan now in operation at Ryegate Paper Co. The employees and the company have been receiving the mutual benefits of the plan since its induction in October 1947.

Mr. Brady is highly qualified by training and experience to discuss this subject which is a highly controversial one in pulp and paper mill management. He is a graduate of the University of Texas and of Columbia, where he achieved an M. S. degree in industrial management.

Prior to assuming fulltime duties at Ryegate Paper Co. in June, 1947, Mr. Brady was located in Perkins-Goodwin Co.'s office in New York City where he worked as an engineer with their production and management service. He was formerly with Southland Paper Mills, Inc., at Lufkin, Texas, and worked with the Atomic Energy Project at Oak Ridge, Texas, during the war.

PULP & PAPER is not taking sides on the issue of incentive bonuses in publishing this article, which obviously is based on an actual case of a highly successful application of the plan. We are aware the plan might not be successful in some other companies under a different set of conditions. We are aware that some opponents of incentive bonuses have contended that there is no way of insuring that a bonus would be payment for any actual contribution to increased production by an employee or a group of employees.

which would bring the possible operating average to 120 or 130 tons per day. Let us consider, then, what this may mean in terms of dollars to the mill so we may arrive at some basis upon which to establish the amount we can afford to invest in the bonus plan in order to obtain this increase in production. If our mill is completely integrated with respect to raw materials, it is reasonable to assume that our total cost of manufacture may be \$100 per ton and that is made up of approximately \$60 per ton for such direct costs as raw materials, supplies, steam, power, etc. and approximately \$40 per ton consists of such indirect costs as labor (correctly considered as a fixed cost for these purposes), maintenance, administration, overhead, depreciation, etc. Our mill would probably employ about 250 men subject to the bonus plan, and the labor cost, including maintenance labor would probably amount to \$20 per ton, or equivalent to \$13,000 per week based on 6½ days operation. The full increase from 100 tons per day to 130 tons per day would reduce our indirect costs from \$40 per ton to \$30.77 by proportion which would result in a saving of \$6,000 in manufacturing cost for the week.

All of this amount could be returned to the employees in the form of a bonus for this top production of the mill is satisfied to take the profits from the sale of the additional paper as its share. This would generally not be the case, however, since the profit margin is so unstable that from the viewpoint of management this would not be a sound basis for the establishment of the wage incentive. The mill can afford, however, to return at least 50% of these savings in the form of a bonus, which means that no one has anything to lose, and all have a chance to gain. In fact, the employees stand to gain up to 23% of their regular wages, and the manager who may be reading this has probably already determined that the mill's gain may consist of a reduction

of \$4.60 per ton in manufacturing cost plus 30 additional tons for sale at the normal profit.

### Bonus Production Scale

Therefore, we may set up the bonus production scale as follows:

The tons listed indicate the weekly average of the production rate per scheduled operating day of 24 hours. The percentages refer to the amount of bonus to be added for the week to the employee's total of straight and overtime earnings.

100.0 to 102.5 Tons	1%
102.5 to 105.0 Tons	3%
105.0 to 107.5 Tons	5%
107.5 to 110.0 Tons	7%
110.0 to 112.5 Tons	9%
112.5 to 115.0 Tons	11%
115.0 to 117.5 Tons	13%
117.5 to 120.0 Tons	15%
120.0 to 122.5 Tons	17%
122.5 to 125.0 Tons	19%
125.0 to 127.5 Tons	21%
127.5 to 130.0 Tons	23%

The payment of the bonus may be made satisfactorily with the regular paycheck each week on the average production per scheduled operating day for the week. That is, each week affords a new opportunity to "make the bonus".

In order for the plan to be fully effective, it must be started correctly and administered properly. All employees should understand that it is not intended as an increase in wages, but represents a saving in costs which the management can afford to pass along if it is in a position to do so because of the increased production. There must be a clear definition made for scheduled shutdown time for maintenance or repairs as against lost time which occurs during periods of scheduled operations. Interruptions in production during scheduled operations, even if they are not attributable to management or the employees would generally be considered as lost operating time rather than scheduled shutdown time or allowed shutdown time. This is justified since our plan is based on the policy of a return of savings, and if the company does not make the savings it is not in a position to pay the bonus.

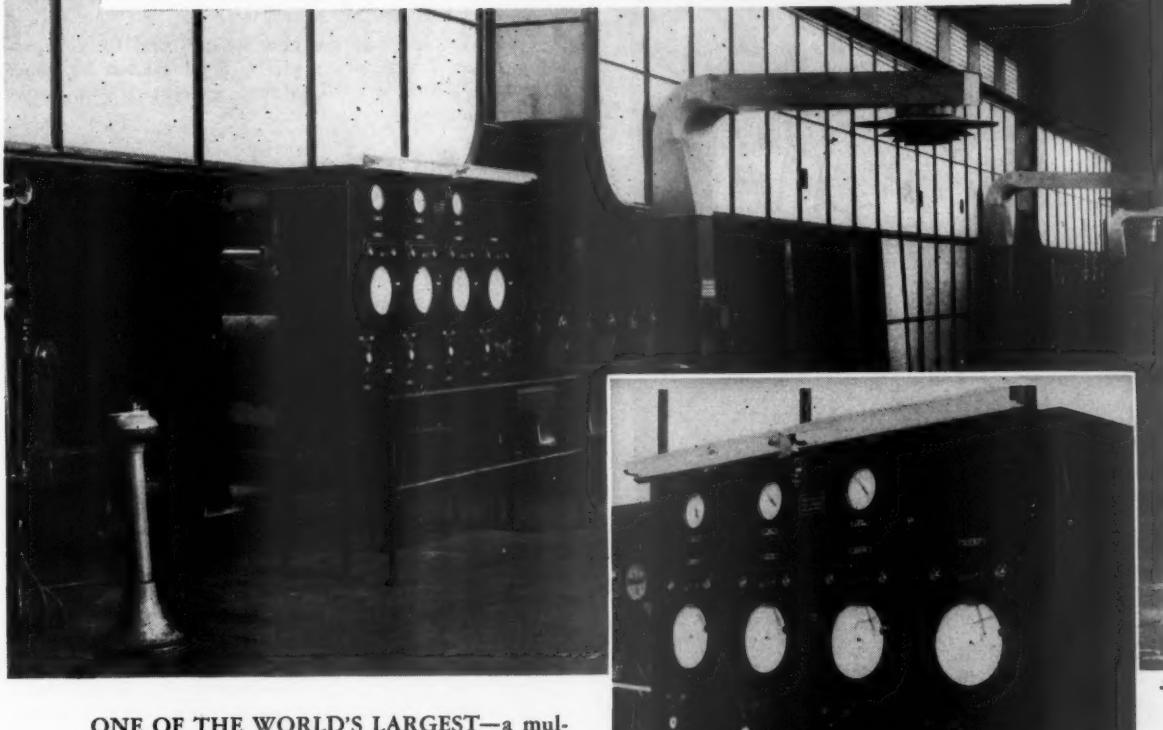
The mechanics of the plan presented are simple, workable, and unlike most wage incentive systems, requires very little record keeping and book work to keep it going. Once the proper scale has been established, the program runs by itself except for the mathematics of applying a percentage to the regular payroll.

The "official" bonus production should be posted daily showing the production for the previous day and the accumulated daily average for the week to date. With the plan in operation, there is no question that all employees will become production conscious, and all will want to know "how did we do yesterday?"

With this kind of motivation, you will be moving forward to smoother operation, the elimination of much unnecessary lost time, the development of better operating techniques, and careful day to day progress. These factors all add up to increased production which may be as much as 30%.

## MASONEILAN CONTROLLERS

**Maintain Uniform Drying Temperatures  
on Large Glassine Machine**



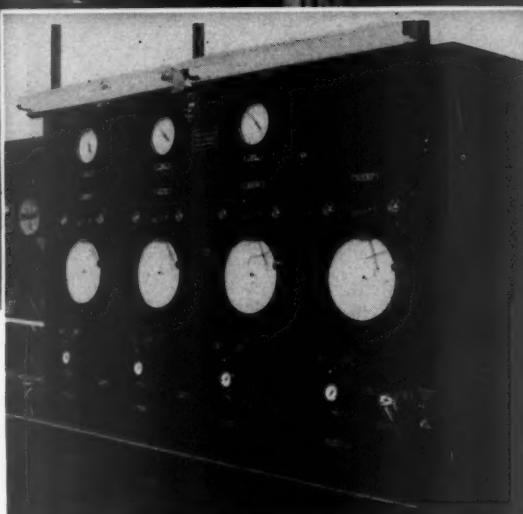
ONE OF THE WORLD'S LARGEST—a multiple-section glassine machine—relies on Mason-Neilan Instruments for drying control. That's a responsible job!...and Mason-Neilan Controls have held it for 7 years on this particular machine.

Pressure Controllers furnish steam at constant pressure to the steam admission valves. Temperature Controllers guard individual-section drying temperatures closely, where a slip means costly rejects or shutdown.

**Investigate Mason-Neilan Controllers! For these reasons:**

They control *accurately*. They are *simple*, easy to understand and service. They are *rugged and dependable*, will take a beating. And they are component parts of Mason-Neilan Control Systems—well engineered and tested over the years, up-to-date with the latest advances in papermaking control system design.

Complete Mason-Neilan Control Systems are ready for your Fourdrinier or Yankee drying



problems. Will help you to hold quality, increase production, cut rejects. Straight temperature or pressure control, or Mason-Neilan Tenso-Temp Moisture Control. Get in touch with our office nearest you.

**MASON-NEILAN  
REGULATOR COMPANY**

1209 ADAMS STREET, BOSTON 24, MASS.

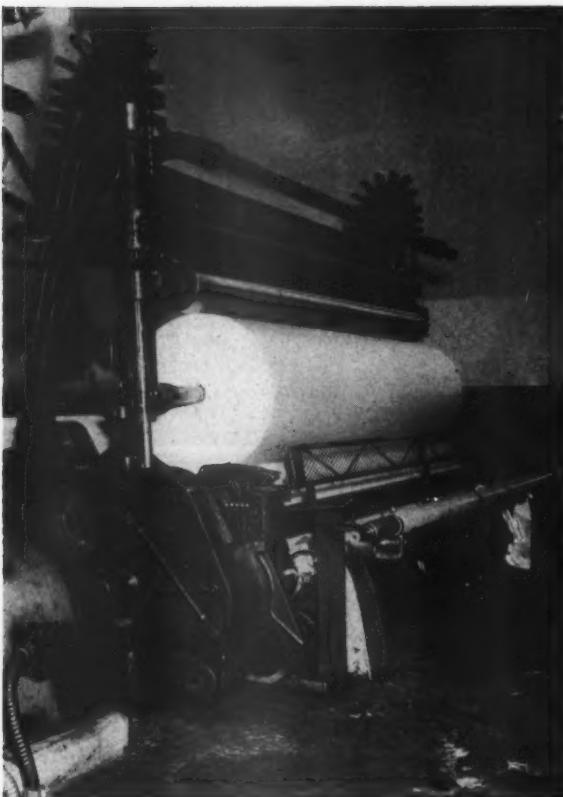


*Sales Offices or Distributors in the Following Cities*

New York • Buffalo • Chicago • St. Louis • Philadelphia  
Houston • Pittsburgh • Cleveland • Tulsa • Atlanta • Denver  
Cincinnati • Los Angeles • San Francisco  
Mason Regulator Co. of Canada, Ltd., Montreal and Toronto

# Camachines

## the first choice everywhere...



### AT FERNSTROM PAPER CO.

Pomona, Cal.

A new Camachine Type 19 serves the winding end of the world's fastest flat tissue machine, meeting the demands of a rapidly expanding California market.

### AT SOUTHLAND PAPER CO.

Lufkin, Tex.

This recently expanded mill has installed a Camachine Type 20 high speed winder. The new facilities at Southland have helped to double the company's former capacity on newsprint production.

### AT HAMMERMILL PAPER CO.

Erie, Pa.

A high speed, 170-inch Camachine Type 19, is used with the new Number 7 paper machine. Camachines also serve other big Hammermill machines.

SEE OPPOSITE PAGE...

### Watervliet "Raises the Roof" In Million-Dollar Program

A million dollar-plus improvement program is underway at Watervliet Paper Co., Watervliet, Mich., increasing capacity of this rated 75-ton mill by 10%.

Roof of the coating mill has been raised 15 ft. to make room for three air doctor coaters with high speed drying tunnels. The new coaters which are expected to operate at more than 800 ft. per min. will replace the mill's nine conventional one-side brush coaters, which operate at about 200 fpm. One of the new coaters, an 88-inch machine, is operating while a second (66 inches) is being erected.

A new Fourdrinier section, dual press, size press, and increased drying capacity have been installed on the smaller (114 inches) of their two paper machines.

Also a new pilot pulp mill has started up, making semi-chemical neutral sulfite fibre.

Other installations are new stokers and fly ash collectors for the power plant, a new washer for more thorough deinking of filler fibre extracted from books and magazines.

### LongLac Mill to Start Making Pulp Nov. 22

LongLac Pulp & Paper Co.'s new sulfate mill at Terrace Bay, Ont., will go into operation Nov. 22, two months ahead of the originally scheduled date, according to announcement made by General Manager H. S. Craig. About 4,000 persons will be living in the new town by that time, the mill employing 2,000.

The LongLac enterprise is a subsidiary of Kimberly Clark Corporation and is designed to produce 300 tons daily of bleached kraft pulp. Don Porter is the mill manager.

The plant is 170 miles east of Port Arthur and 65 miles west of Marathon Corp.'s mill. Spruce, hemlock and jack pine will be used in pulp manufacture.

### John McDermott Arrives in Tacoma To Be Paper Mill Superintendent

John A. McDermott, superintendent of the new paper mill being built at Tacoma, Wash., by St. Regis Paper Co., arrived there from Oswego, N. Y., in mid-July. A. C. McCorrie continues as superintendent of the pulp mill, and a superintendent of the new bag plant will be named later.

### New Advertising Textbook By Beckett Paper Co.

An impressive and valuable textbook on advertising is available from The Beckett Paper Co., Hamilton, Ohio, at \$10 per copy.

The 256-page, beautifully-illustrated book, "Advertising and Its Mechanical Production," (page size—10 x 13 inches) is printed by offset lithography in four colors on 32 lb. Brilliant White Beckett Opaque stock—vellum finish. The cover is Buckeye cover stock, mounted on boards, with linen backbone. Dust jacket is printed in four colors by letterpress.

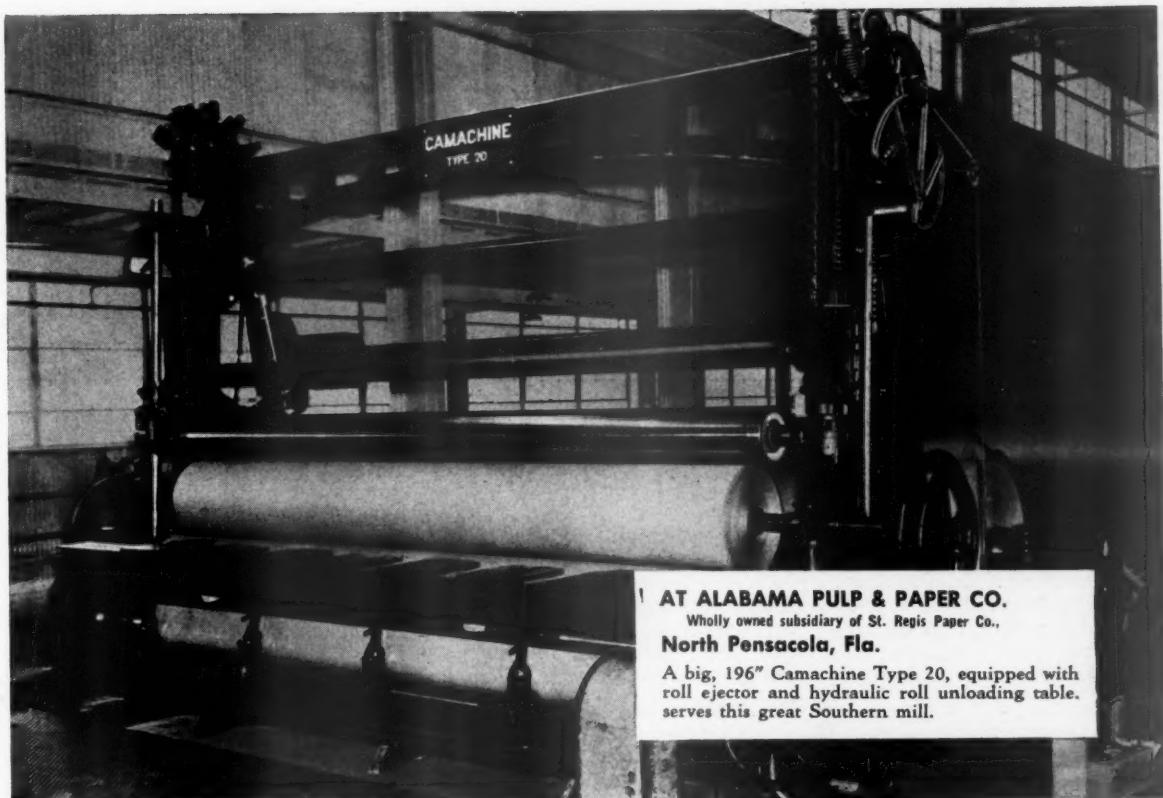
### Everett Pulp & Paper Co. Announces Group Annuity Plant

William J. Pilz, president of Everett Pulp & Paper Co., Everett, Wash., announces that his company has introduced a group annuity retirement program assuring each employee a lifetime annuity on retirement at 65.

The company made a single payment of \$866,000 to purchase past service benefits for employees with services dating back 44 years, and will make future contributions greatly in excess of the amounts made by employees.

# Camachines

**...for top roll-winding efficiency  
at amazing high speeds**



CAMACHINES, the world over, are keeping well ahead of the pace set by the fastest paper mills . . . producing top-quality shipping rolls of news, book, kraft and paper-board at speeds up to 5000 fpm on newsprint.

Clean-cut, wrinkle-free Camachine rolls, wound to uniform density from core to circumference, give smooth performance on the fastest of web printing presses and processing machines. Exclusive Camachine pneumatic web tension assures constant automatic control of the roll density even at the highest winding speeds.

Cameron Machine Company, 61 Poplar St., Brooklyn 2, N.Y.

Other exclusive new Camachine engineering features which are optional on the big mill-type Camachines are: the pneumatic brake on drive and idler roll; push-button controlled motor-driven riding-roll lift and roll ejector; and pneumatically controlled pressure on the cutter wheels and cutter spacer bar.

Write for illustrated literature on modern Camachine slitting and roll-winding equipment for all paper mill and converting plant requirements.

**Camachines**  
FOR FAST, TOP QUALITY ROLL PRODUCTION  
*...the world over*

# Texas Mill Expansion

## DOUBLES PAPER PRODUCTION

The recent entry into production of its second newsprint paper machine was the third important milestone for the Southland Paper Mills, a pioneer industry of Texas. The Lufkin, Texas mill was the first to manufacture newsprint from Southern pine groundwood. Its first newsprint machine started up in 1940. The addition of a 200-ton Kraft pulp mill, which supplied the nation with critically important raw material during the war, took place in 1944.

Now the new machine with its accessories, more than doubles paper production at Southland. Bagley & Sewall Co. manufactured the 238 inch wide, machine, which has a 100 foot long wire and is currently the widest on paper and one of the fastest in the United States. Its operating speed is given by the mill as 1600 feet per minute. It may produce 200 tons after the initial running period, boosting total newsprint production to 380 tons per day. The 1940 machine is a 124 inch cylinder machine.

Expansion of mill facilities to furnish the new machine resulted in doubling groundwood capacity from 150 tons to 300 tons per day, and increasing the bleach plant capacity from 60 tons to 120 tons. The sulfate production remains at 200 tons daily.



**SOUTHLAND PAPER MILLS' OFFICIALS**, and other guests were on hand to celebrate No. 2 machine start-up. Left to right, ERNEST L. KURTH, President of Southland; W. R. CRUTE, Manager, Houston Div., Champion Paper & Fibre Co.; RICHARD W. WORTHAM, JR., Southland's Executive Vice President; GEORGE R. BROWN, President, Brown & Root Co.; W. C. POWELL, Project Engineer, Brown & Root Co.; A. E. DREW, Chief Engineer, Southland Paper Mills, Inc.

### Groundwood Additions

To the groundwood mill were added eight Great Northern type grinders manufactured by Montague Machine Co., fitted with Norton pulp stones and controlled by Watroud Ltd. (Canada) electric load governors. There are two grinders on a line driven by a 4000 HP General Electric synchronous motor.

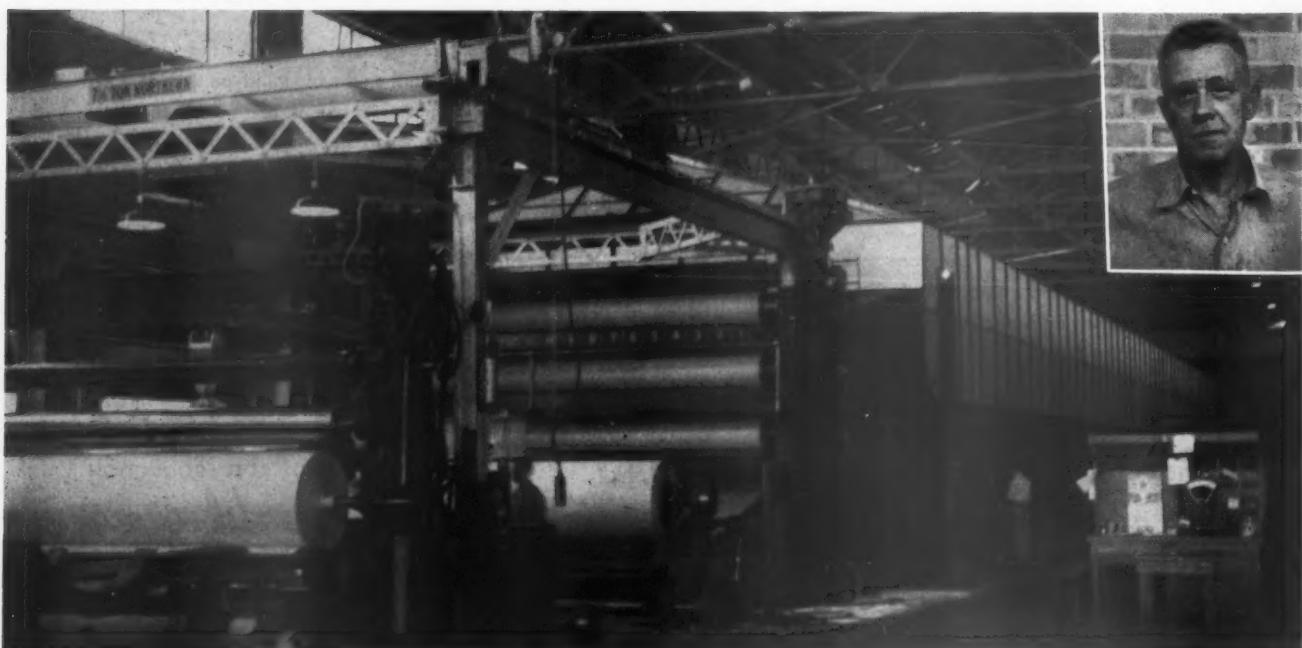
Following the grinders are flat, vibrating type bull screens manufactured by Lufkin Foundry & Machine Co. Further screening is performed by Cowan type

centrifugal fine screens manufactured by Montague Machine Co.

Thickening of the groundwood stock prior to storage for distribution to the paper machines is effected by large deckers furnished by Improved Paper Machinery Co. Stock and water pumps came from Gould's; and all general purpose motors from Reliance.

The Improved Paper Machine Co. furnished the equipment with which the capacity of the bleach plant doubled. The increased capacity for bleaching is for

**DIRECTING INSTALLATION OF NEWSPRINT MACHINERY** at Southland Pulp & Paper Co., was C. H. Galloway (upper right), erector for Bagley & Sewall. Top scene shows Bagley & Sewall machine with Camachine winder, Pope reel, and Farrel-Birmingham calender.





Offices and representatives in 59 cities

In the United States, Europe, Latin America, and the Far East

# PULP PAPER

## Domestic Export Import

The changing pattern in the pulp and paper market requires many readjustments. On these may depend much of the success of mills and converters. With its century-old experience in distribution, Bulkley-Dunton is well equipped to assist the producers, purchasers, and exporters of pulp and paper to chart a clear course through the changing market.

BULKLEY, DUNTON & CO., INC. • BULKLEY, DUNTON PULP CO., INC. • BULKLEY, DUNTON PAPER CO., S. A.  
BULKLEY, DUNTON CELLULOSE EXPORTS, INC. • BULKLEY, DUNTON PAPER (FAR EAST) CO. INC.

In New England — CARTER, RICE & CO. CORPORATION

**BULKLEY-DUNTON**  
ORGANIZATION  
295 MADISON AVENUE, NEW YORK 17, N.Y.





SCENES AT SOUTHLAND PAPER MILLS—Upper left, ABE COOPER (left), President, Bogley & Sewall, and W. L. McHALE (right), Vice President and General Manager, Southland, hand-shake in front of the new machine. Upper right, THOMAS N. CARTER (right), head of Cameron Machine Co.'s engineering dept., and J. S. SCHEUERMANN (left), Vice President and Sales Manager of Cameron, standing at the high-speed Camachine.

Lower left, l. to r.—Mr. McHale again; LOUIE PELKEY, Supt., Groundwood Mill;

and J. E. WATERHOUSE, General Manager, Montague Machine Co., in the groundwood mill. Lower right—J. L. VAN NORT (left) and FRANK DENISON (right) of Reliance Electric and Engineering Co., stand at the Reliance V+S paper machine drive. Note the Section Interlock Regulator, providing accurate draw control, mounted on top of motor.

Montague Machine Co. manufactured Great Northern type Grinders behind the men in the lower left picture.

both newsprint and cylinder board stock.

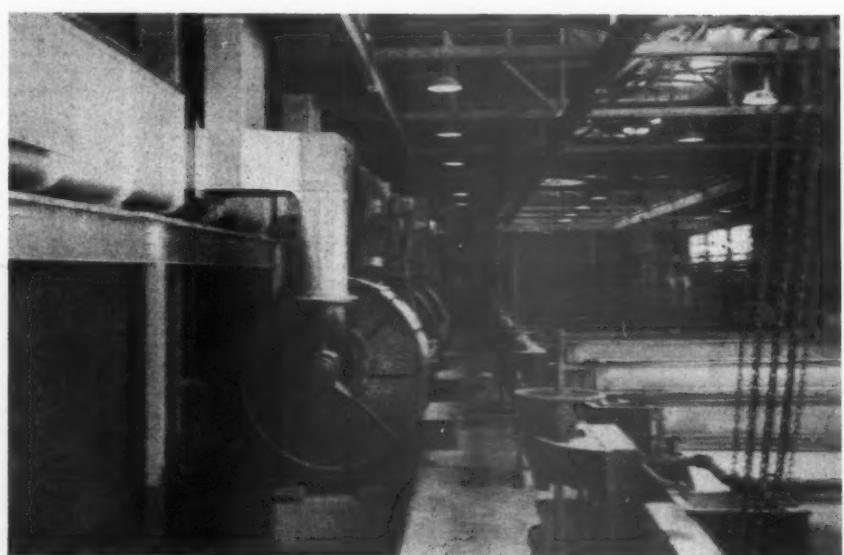
Other new equipment added included two E. D. Jones & Sons Co. jordans and one Valley Iron Works Co. broke beater.

The head box of the machine is fed through a Sharlton type flow distributor and discharges to the wire through an adjustable slice. The head box is clad with Monel. Apron and slice are also of Monel. The furnish first passes through Bird screens.

The new machine has a Beloit couch and section presses. It has two press sections. It has fifty-five-foot diameter dryer rolls, calender stack, a Pope reel and a Cameron high speed winder. The J. O. Ross Engineering Co. furnished the ventilating system and the paper machine hood. Vacuum for press, couch and flat boxes is furnished with Nash Engineering Co. pumps.

Lodding doctors have been installed from breast roll through calenders.

Ross Engineering Corp. installed a more complete ventilating and heat system for Southland than in most mills. When



MONTAGUE COWAN TYPE centrifugal screens were supplied for the mill at Lufkin, Texas, by the Montague Company of Turners Falls, Mass.

For cost-wise mills . . .

## STOCK LINES of MONEL



**M**ORE than 15 years of trouble-free service! That is what one mill reports of MONEL\* stock lines used for carrying alkaline bleached sulfite pulp. Scores of other mills report similar experiences with MONEL pulp-handling equipment.

What special properties of MONEL make such remarkable service records possible? There are many. It will pay you to consider them carefully!

MONEL is 100% rustproof, and highly resistant to corrosion and chemical attack. These features, alone, will put an end to your stock-line deterioration worries.

Add to the list, satin-smooth finish, strength equal to structural steel . . . and you have a metal "made-to-order" for pulp, paper, and board mill uses.

You'll find MONEL easy to work with, too. You can weld, braze, and solder it . . . perform any standard fabricating operation without special tools.

Important, too . . . because of MONEL's exceptional strength, you can use lighter sections for stock lines. Van Stone or other readily-connected joints will make it easy for you to remove or redesign your installations.

Your nearest INCO distributor stocks easily-workable "35" MONEL sheet. Or, if you prefer not to do your own fabricating, he will recommend competent concerns specializing in this work.

You'll find a list of distributors in: "Lighter Weight, Longer Life, Lower Cost Stock Lines." Send for your copy today.

\*Reg. U. S. Pat. Off.

**THE INTERNATIONAL NICKEL COMPANY, INC.**  
67 Wall Street, New York 5, N. Y.

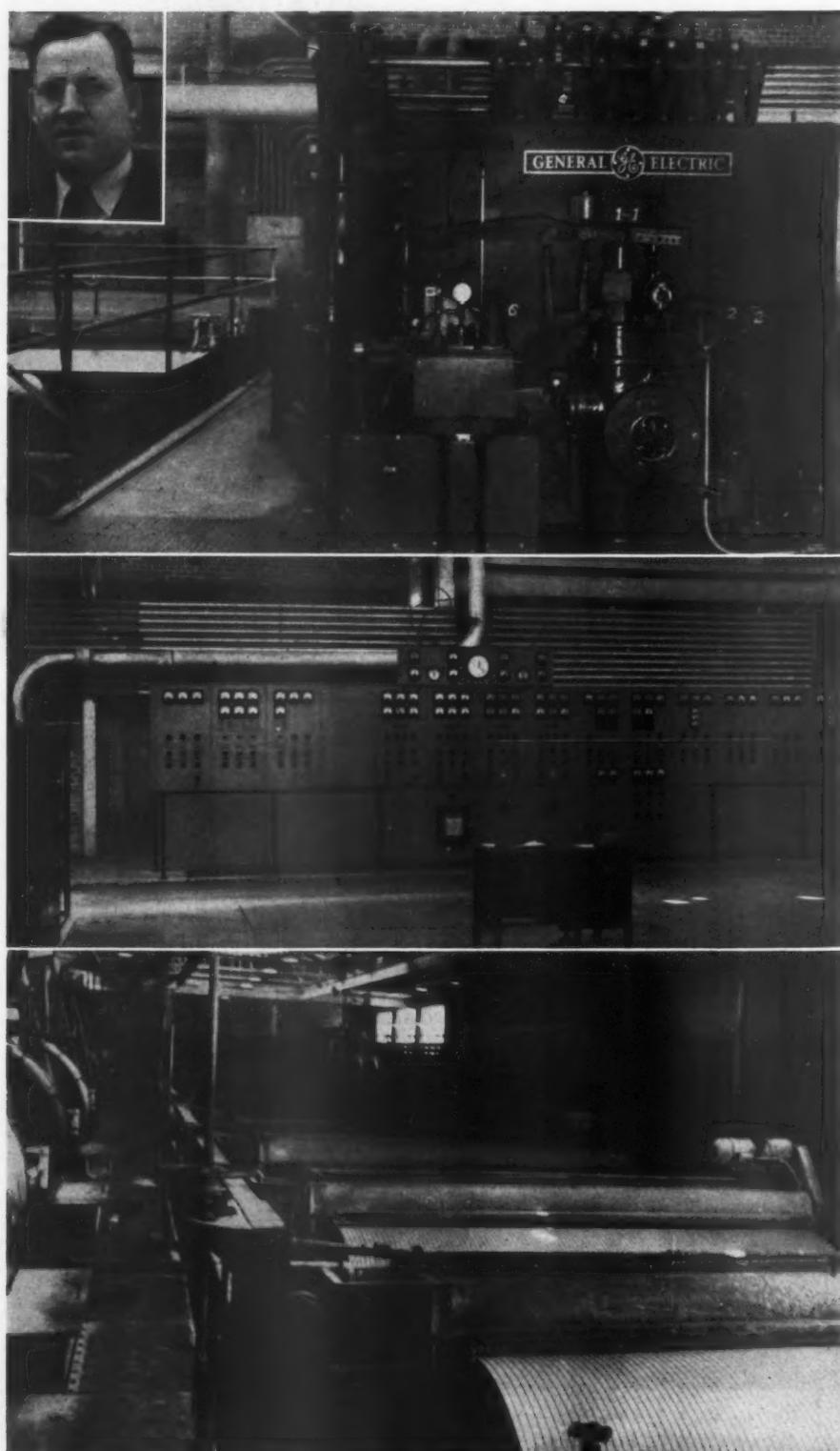
**MONEL . . . for Minimum Maintenance**

**POWER PLANT EQUIPMENT AT SOUTHLAND:**

Top, one of the new 10,000 KW 17-stage General Electric turbo-generators; top left, D. C. Edmiston, Power Plant Sup't.

Middle View—Duplex board with cubicle (GE) control, buss bars for synchronization or segregation of circuits, etc. To the right of the clock is the 2300-volt section, the two GE generators' hook-in, topped by synchronizing panel. At lower right is the DC exciter for all synchronous motors.

Below—Large groundwood deckers, provided by Improved Paper Machinery Corp., handling 150 tons per day added volume at the Southland operations.



the new paper machine was installed, it was necessary not only to install the required air and ventilation equipment for this machine, but also provide additional air for both the pulp machine and the original No. 1 machine.

For the new machine, Ross Engineering supplied a hood and exhaust system, heating and ventilating for the new machine roof, bottom felt supply system, calender cooling system, trim conveying system, spot ventilation for comfort of operators, wet and exhaust around head box and bird screens, air makeup to the machine room, motor cooling for the machine drive, stock preparation ventilation, turbine room ventilation and grinder room ventilation.

**Description of Drive**

The machine is driven by a Harland-type sectionalized drive manufactured by Reliance Electric & Engineering Co. that is regulated by a Reliance built interlocking regulator. Because the power needed by each section is large, and to provide crawl speeds for any section or group of sections independent of the others, boosters are used. The control was built by Cutler-Hammer to Reliance specifications.

The draw between sections is accurately controlled by a Reliance interlock regulator. These are of the positive mechanical differential type and are mounted integrally with the individual section drive motors. Adjustment of the draw is available to the operator at both the front and back side of the machine. The installation regulates the amount of paper in feet per minute passing through the section.

The prime mover synchronous motor is rated at 1450 HP driven at 1000 KW. The DC generator has 460 voltage. The couch has a 500 HP motor; the first and second presses, 125 HP DC motors each. The three drier sections are geared together and individually driven by 125 HP DC motors. The calender is driven by a 250 HP motor, the reel by 50 HP and the winder by 100 HP, all Reliance. All motors have forced ventilation.

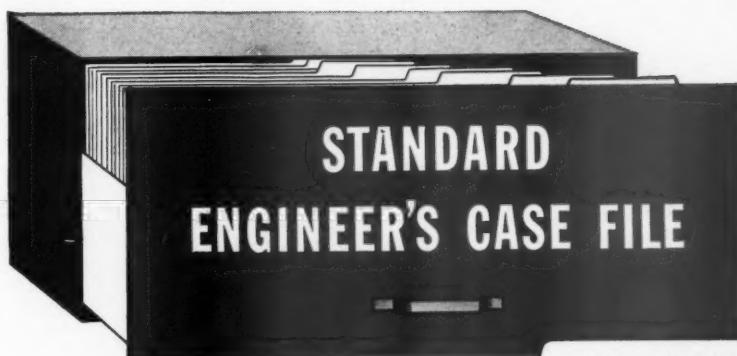
Gear reducers between motors and drive shafts of the paper machine are a part of a complete drive supplied by Reliance and are enclosed parallel shaft type, built by Lufkin Foundry & Machine Co.

The newsprint machine control board is equipped with test jacks to permit checking of electrical performance of equipment while it is in operation.

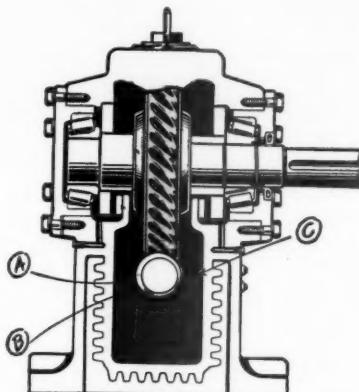
The most recent expansion of Southland represents an investment of approximately \$8,000,000. Contract was let to Brown & Root, Inc., Houston, Texas, contractors, in March, 1946. Consultation was provided by The George F. Hardy engineering firm of New York. First ton of newsprint was on March 30, 1948.

**Power**

Increased power required for the machine and its accessories is provided by two 10,000 KW General Electric turbo-generators with steam from two Combustion Engineering gas-fired boilers. Wood



CASE 1043-MINIMIZING LEAKAGE  
IN LARGE ENCLOSED GEAR SETS.



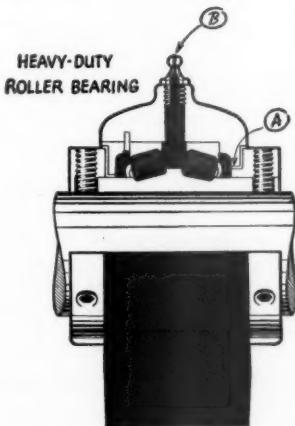
AIR-COOLED WORM GEAR SPEED REDUCER

In heavy-duty industrial enclosed reduction gears the relatively high viscosity characteristics of Calol Gear Compound cut consumption. Efficient in both conventional and worm types and where such gears carry extra loads or are worn. Comes in eight grades: 60, 100, 120, 135, 150, 190, 225 and 410.

- A. Oiliness and extreme pressure additives cushion shocks, prevent vibration, welding and extra wear.
- B. Non-corrosive - will not harm bearing or gear metals.
- C. Contains effective foam inhibitor - breaks bubbles that form and stops building up of pressure in case.

Calol Gear Compound resists high temperatures and retains good body in all operating conditions. Its numerous viscosity grades make it adaptable to a wide range of applications and conditions.

CASE 1065-SECURING POSITIVE  
BEARING LUBRICATION IN HIGH  
RADIATED TEMPERATURES.



Calol S. A. Grease stopped leakage and drippage trouble in a large roller bearing even when bearing temperature, due to radiated heat, reached 250°F. and over. Originally developed for heavy-duty anti-friction bearings, but adaptable to many industrial grease-lubrication services where high ambient temperatures exist. Comes in three grades: No. 00, No. 0 and No. 1.

Has sodium-aluminum soap base - feeds evenly through bearings ... oil stock selected for high heat-resistant qualities.

- A. Minimizes seepage through housings and seals.
- B. Resists cold temperatures - pumpability remains good in all weather.

Calol S.A. Grease has proved excellent for low-, medium-, and high-speed anti-friction bearings. It is packed in 35-, 108- and 420-pound containers.

Trademarks, "Calol," "RPM," Reg. U. S. Pat. Off.

STANDARD TECHNICAL SERVICE will make your maintenance job easier. If you have a lubrication or fuel problem, your Standard Fuel and Lubricant Engineer or Representative will gladly give you expert help; or write Standard of California, 225 Bush Street, San Francisco 20, California.



FOR EVERY NEED A **STANDARD OF CALIFORNIA** **JOB-PROVED PRODUCT**

handling equipment was expanded and four water wells to augment supply to 16,000,000 gallons daily were drilled 4½ miles north in Nacogdoches county, the flow being brought to the mill by a pipe line that passes beneath Angelina river.

Protection of the fishing qualities of Angelina river itself is provided by three settling basins for mill effluent covering an aggregate 200 acres, and representing an investment of \$100,000.

Planning of the expansion of the power house facilities of Southland Paper Mills to take care of demands created by the new paper machine and its servicing equipment has resulted in a highly centralized control over electrical production and distribution.

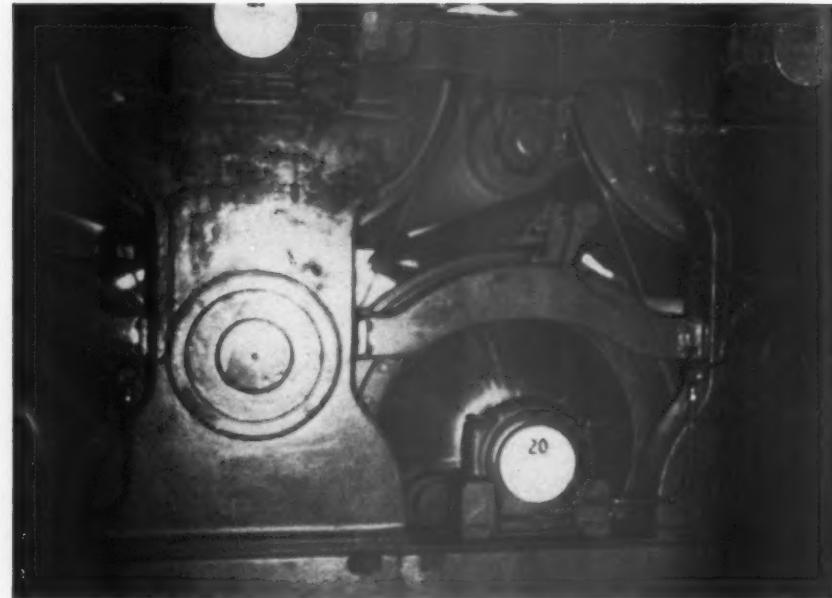
The resultant arrangement of controls for all phases of the operation makes for convenience in seeing all instruments, meters, panel boards, and signal lights. The foreman in charge can stand at his central point (desk) and see all main operators during start-ups, shut-downs, or emergencies and can signal one end station to another so that the men can know what to expect (dropping of load, etc.).

Facing the foreman is the new duplex control board with cubicle control and bus bars providing either for synchronization of all generating and distributing facilities tied together, or for separation into three independent operations. To change from synchronized to separate functioning, to isolate any section controlling any piece or set of equipment in the mill, is but a matter of seconds.

On the face of the duplex control board are painted three stripes, actually miniature straight line drawings of the buses they represent in color: No. 1. white, No. 2. red, No. 3. green. In the accompanying photograph, the green stripe is to the far right of the center clock. To the left is a yellow stripe, which relates to the transformers.

The steam generating plant at Southland originally included three Foster-Wheeler 75,000 pounds per hour boilers. In the recent expansion there was added two Combustion Engineering 175,000 pounds per hour boilers. Design for all five is for 600 pounds pressure, 750 degrees temperature F. In addition to these five, there is a Combustion Engineering recovery unit that produces 75,000 to 80,000 pounds per hour. A Babcock & Wilcox boiler originally in the power house was moved bodily to a location adjacent to the barking drums and converted into bark burner. It pipes steam to the mill. This boiler is used for water treating as all treated make up is sent to it and reaches the other (high pressure) boilers as condensate.

The original installation included two 6000 KW 16-stage General Electric turbo-generators. To take care of the mill expansion's need for power there were installed two 10,000 KW double automatic, 17-stage extraction turbo-generators. These operate at 3600 RPM., take steam at 600 pounds 750 degrees, with exhaust pressure at 3" ABS. Current produced is 6900 volt, 3-phase, 60 cycle.



LODDING DOCTORS (Lodding Engineering Corp., Worcester, Mass.) have been installed from breast roll through the calenders on the Southland's new machine.

The additional equipment installed in the power plant includes a new 650,000 pounds per hour spray type de-aerating water treatment and heating unit; and, behind this, are two Ingersoll-Rand 800 gallons per minute boiler feed water pumps. The latter are made of five percent chrome steel.

The standard crew for control work on the operating floor of the power house includes the foreman, one operator for turbine and switch board, one assistant operator for turbine and switchboard, and two firemen, one for the three older boilers and one for the two new Combustion Engineering units. Other workers are also employed in the power house.

#### Top Officers

Top executive of the Southland Paper Mills is Texas-born Ernest L. Kurth, president. Richard W. Wortham, Jr., a graduate of Yale's Sheffield Scientific School, is executive vice president.

Walter L. McHale, former George F.



RAYMOND J. LEE, Vice President of Lockport Felt Co., Newfane, N. Y., has been elected to the Board of Directors of the National Better Business Bureau of New York City, formed to protect the public from fraud by misleading advertising and sales promotions. Honest advertising is vital to the publishing and direct mail business, largest consumer of paper.

Hardy firm engineer and native of Connecticut, was recently made vice president and general manager. K. W. Cooke is secretary-treasurer.

#### G. D. Janssen Co. Moves

The G. D. Janssen Co., Inc., has moved into new central offices in the Electric Building on the public square at Watertown, N. Y. Frank J. Hoar, vice president and general manager, heads the offices.

#### Safety Record in B. C. Praised by Ben Cancell

British Columbia's nine pulp and paper mills established a 50% better safety record last year than in 1946, according to B. R. Cancell, vice president of Powell River Company and chairman, Western Branch, Canadian Pulp and Paper Association.

"Personnel, consisting of some 6,500 men and women, is helping to greatly improve the accident record," said Mr. Cancell. "It is now a common accomplishment for any one of the big plants to run well over 100 days without a lost time accident."

#### Watervliet Slide-Show

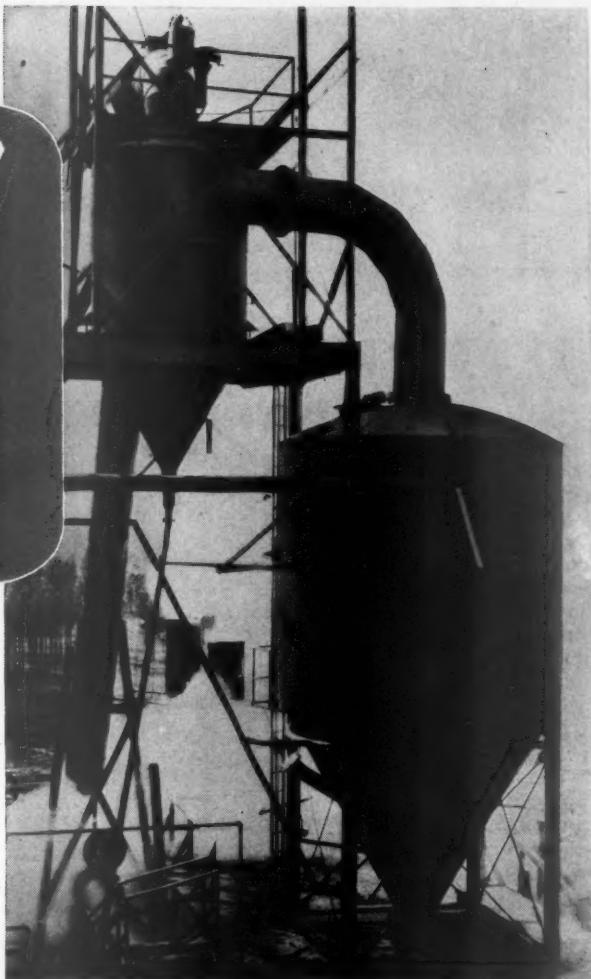
A slide-show, "The Manufacture of Coated Book Papers," has just been completed by the Watervliet Paper Co., Watervliet, Mich. It consists of 75 slides in full color.

#### MULTIWALL MACHINE OPERATOR

Must be thoroughly experienced. Familiar with Coto Tuber and Bottomer. Good opportunity for the right man. Modern plant located in the South. Write all details stating age, experience and salary. Reply Box No. 14, Pulp & Paper.

# Armored AGAINST EROSION AND CORROSION

**Stainless Clad Steel was used for the wear plates of this Cyclone, built by Florida Pulp & Paper Company for installation in its Pensacola, Florida, plant.**



Type 304 stainless steel is highly resistant to the erosive and corrosive action of caustic-laden steam blown into this cyclone. Employed here as 20% of the thickness of the Lukens Stainless-Clad Steel wear plates, it provides both protection and structural strength with economy.

In pulp and paper processing, Lukens Clad Steels offer these advantages: no rusting to contaminate products, long life for digesters, tanks and other equipment, solid corrosion-resistant metal protection with *clad* steel economy. Lukens Nickel-Clad Steel satisfies certain requirements, while Stainless-Clad, Inconel-Clad and Monel-Clad take care of others.

Now available in the extra smooth, Sodium Hydride Finish, Lukens Clad Steels are easy to keep clean and minimize sliming. Claddings 10% or 20% of total plate thickness suit most requirements. Lukens offers the widest range of clad steels available from any source—a uniform cladding permanently bonded to a steel backing plate, in thicknesses to over 3" or as wide as 17".

Bulletins 255 and 338 contain data on all Lukens Clad Steels. For copies, write Lukens Steel Company, 444 Lukens Building, Coatesville, Penna.



## LUKENS

Nickel-Clad Stainless-Clad  
Inconel-Clad Monel-Clad

**STEELS**

**SOLID METAL ADVANTAGES WITH CLAD STEEL ECONOMY**

• • SPEED SCRAP TO THE MILLS TO MAKE MORE STEEL • •



*Pulp and paper mills of North America consume more than 30,000,000 cords of wood annually, worth about \$400,000,000.*

## Conservation Meeting in South GOOD THINNING PRACTICES SHOWN

Intensified activities of the Southern Pulpwood Conservation Association will be based in four subdivisions, each with its own directors, to permit closer cooperation between mills having similar forest problems, and permitting greater participation of pulpwood dealers (contractors) under a plan approved by the organization's executive committee during the summer field meeting at Durham, N. C., June 22-23.

With a registration of 139, the field meeting not only proved well attended but of manifest interest to those who participated. At the same time it provided a final demonstration that distances in the South are too great to permit normal development of an expanding interest in the Association's work through a single geographically placed meeting. These distances, as shown by experience, require excessive travel time, preventing participation by dealers actively serving the mills, or attendance of many woodland staff members.

Under the new arrangement approved by the association's executive committee the territory will be divided into four sections by geographically and operational conditions. The four subdivisions will each be headed by a board of directors composed representatives of each mill therein, plus a director-at-large selected from managerial ranks of the mills.

Each group will select two men to serve on the top executive committee of the Association. These eight, with the organization president and the sectional director-at-large will compose the top policy group of 13. The directors of the four sections will hold an annual meeting (other sessions if necessary) and their recommendations as to the Association's direction will be placed before the annual meeting of executive committee for action. The sectional boards will direct activities within their spheres.

The divisions and participating mills or companies areas follows:

1. Virginia, North Carolina, Tennessee, and Piedmont region of South Carolina:

Chesapeake Corp. of Va., West Point, Va.; Champion Paper & Fibre Co., Canton, N. C.; Continental Can Co., Hopewell, Va.; Glatfelter Pulp Wood Co., LaPlata, Md.;

North Carolina Pulp Co., Plymouth, N. C.; Riegel Paper Co., Bolton, N. C., The Mead Corp., Kingsport, Tenn.

2. Coastal South Carolina and Georgia, and East Florida:

International Paper Co., Georgetown, S. C.; West Virginia Pulp & Paper Co., Charleston, S. C.; Union Bag and Paper Corp., and the Southern Paperboard

Corp., Savannah; Brunswick Pulp & Paper Co., Brunswick, Ga.; Container Corp. of America, and Rayonier Inc., Fernandina, Fla.; National Container Corp., Jacksonville; St. Joe Paper Co., Port St. Joe, Fla., and Macon Kraft Corp., Macon Ga.

3. West Florida, Alabama, Mississippi, and Louisiana east of the Mississippi:

International Paper Co. mills at Panama

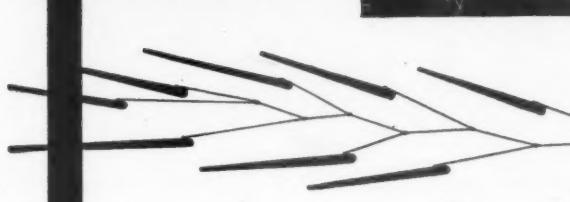
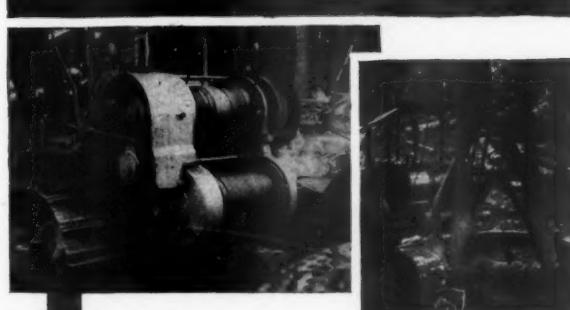
**MOST EFFECTIVE METHOD OF THINNING** is demonstrated in picture at left. Hardest and most promising trees (white circled around trunk) are selected and given a chance to flourish by cutting out poorer trees surrounding them. This is crown thinning method, which Duke University School of Forestry has found superior from the standpoint of an optimum supply of timber over indefinite period of time. Right, Dean C. F. Kortian (center, with loudspeaker) of Duke University, points out characteristics of dense stands of young timber which are not yet thinned. Thick growth of tall, spindly trees will reach stagnation point in which no further growth will result until a number die and make room for others.



# CARCO

Pioneers in...  
PULP LOGGING EQUIPMENT

New CARCO Sulky, Winches, Hoists, Rigging and tractor-logging methods get tons of logs fast for the Nation's hungry pulpwood markets.



**CARCO RIGGING** is designed for tractor logging—for pulling, hoisting, skidding, and loading.—Available in a full range of hooks, sockets, ferrules, rafting dogs ...



● **THE CARCO JUNIOR SULKY AND "S" WINCH TEAM** makes arch logging possible for small tractors from 15 to 30 HP. For fast delivery of small loads or where logs are scattered, this midget Sulky and 6,000-lb.-pull Winch bring in clean logs. Wheels are adjustable to two widths for any terrain.

● **THE CARCO STANDARD SULKY AND "E" WINCH TEAM** for tractors to 45 HP arches larger loads of small logs. If traction is poor due to rain, a Winch-Sulky rig keeps you in the woods longer. To haul over a slick or bog, drop the load, go ahead to firm ground paying out line. Then winch up load and proceed.



● **A CARCO "R" HOIST** equipped tractor coupled to a portable spar can go into a heavy stand or rough terrain where arching is impractical and do a quick job of cold-decking. Many loggers are now producing pulpwood profits from otherwise waste trees by pre-logging with a mobile spar.

● **CARCO SULKY LOGGING PRODUCES THREE TIMES** more logs than ground skidding methods. **FALL YOUR TREES** in a herringbone pattern, butt ends in the direction of Sulky travel, for best production.



● **THE NEW SNATCH CHOKER SYSTEM** for Sulky or high lead logging saves valuable gathering time in the woods. Pre-set chokers are "snatched" to the mainline, then logs are automatically bunched as the line is pulled in.

CARCO tractor logging equipment and methods have been developed by loggers for loggers on *all* types of operations. **REMEMBER—THERE IS A CARCO WINCH OR HOIST FOR NEARLY EVERY CRAWLER TRACTOR EVER MADE AND AN ARCH OR SULKY FOR EVERY TYPE OF TIMBER.**

**PACIFIC CAR AND FOUNDRY COMPANY**  
SEATTLE, WASHINGTON U.S.A.

WRITE TODAY FOR ADDITIONAL  
PULP LOGGING INFORMATION

City, Fla., Mobile, Ala., and Moss Point, Miss.; Florida Pulp & Paper Co., Pensacola, Fla.; Hollingsworth & Whitney Co., Mobile, Ala.; Coosa River Newsprint Co., Childersburg, Ala.; Gulf States Paper Corp., Tuscaloosa, Ala.; Gaylord Container Corp., Bogalusa, La.; and Johns-Manville Products Corp., Natchez, Miss.

4. Louisiana west of the Mississippi, Arkansas and Texas:

Southern Advance Bag & Paper Co., Hodge, La.; International Paper Co., Bastrop and Springhill, La., and Camden, Ark.; Southland Paper Mills Inc., Lufkin, Tex.; and Champion Paper & Fibre Co., Pasadena, Tex.

The association already has district foresters to handle organization work under the decentralized set-up: F. J. Cook, at Marshall, Tex.; Dawson Jennings, Elberton, Ga.; H. J. Doyle, area forester for North Carolina and Virginia; and association headquarters at Atlanta, Ga., where Henry J. Malsberger, forester-manager holds forth.

#### Review of Talks

Ray F. Weston, Association president, commented at a dinner session that "regulation propaganda had come out of hibernation" but is currently very nebulous. Referring directly to a recently published article, he declared the facts were distorted, and either the author did not know from ignorance or will not admit what is correct. He spoke of bringing the pulpwood dealers more actively and extensively into the Association's affairs. New members this year included Coosa River Newsprint Co. (Childersburg, Ala.); The Mead Corp. (mill at Kingsport, Tenn.); and the Independent Pulpwood Dealers' Assn. of East Texas.

C. F. Korstian, Duke Forestry School dean, gave the history of the Duke forest and was leader for a field trip. First lands were acquired from 1924 to 1927, and intensive management begun in 1941. The stand is typical, and the forest has been self sustaining for the 16 fiscal years completed. The forest includes 7,259 acres, of which 1,034 are plantation.

Henry Malsberger reviewed recent association activities; stated the educational motion pictures will soon be completed for distribution. The Association mills last year planted 7 million seedlings on their own land; gave away 26 million more. The plantings approximately 1/3rd of the trees cut.

In checking dealers cutting practices on 100,000 acres of forest lands it was found that: 18% of acreage was clear-cut; 18% left with seed trees; 43% had partial (selective) cutting; 13% was salvage operation; and 8% land clearing. In terms of cordage, 20% of volume was from clear-cutting; 30% leaving seed trees; 37% from partial cutting; 5% from salvage; and 8% from land clearing. The percentage of lands on which partial cutting is practiced is increasing.

V. J. Rudolph, assistant forestry professor at Duke, reported on cooperative pulpwood operations among farmers and small land owners. The objective, he said, is to maintain a woodyard (selling



LEADING SPEAKERS AND PARTICIPANTS at the Southern Pulpwood Conservation Ass'n meeting at Durham, N. C., included, left to right: Top row, C. F. KORSTIAN, Dean, Duke University's forestry school; VERTREES YOUNG, of Gaylord Container Corp., Bogalusa, La.; J. E. McCAFFERY, International Paper Co., Georgetown, S. C.; J. H. JOHNSON, Chesapeake Corp. of Virginia, West Point, Va.; V. J. RUDOLPH, Ass't. Forestry Professor, of Duke; and EARL PORTER, International Paper Co., Mobile, Ala.

Lower row: RAY F. WESTON, Association President, of Hollingsworth & Whitney Co., Mobile, Ala.; HENRY J. MALSBERGER, Association Forester-Manager, Atlanta, Ga.; C. A. HALUPKA, Continental Can Co.; ERNIE ALLEN, Union Bag & Paper Co.; PROF. A. E. WACKERMAN, Duke Forestry School; DALLAS T. DAILY, Seaboard Air Line Railroad; D. E. HAAS, Glatfelter Paper Co.; and JAMES H. GRAHAM, West Virginia Pulp & Paper Co., Charleston, S. C.



AT SOUTHERN PULPWOOD CONSERVATION MEET Dr. T. S. Coile, Professor of Forest Soils at Duke University demonstrates method whereby a sample of soil brought up by an auger can be used, in conjunction with special charts worked out at Duke, to predict the height of trees on any given site at any given period of their growth. It was computed that on this particular site, a pine 50 years old would have attained a height of 90 feet.

to the pulpwood dealer) into which farmers can bring small quantities from clearing edges of right of ways, thinning back from field edges, etc., that is trees that would ordinarily be left to lie and rot.

A. E. Wackerman, professor of forestry, told of the arrangement established between the Duke School of Forestry and the Southern Pine Association whereby the college would recommend graduates and the Association place them with lumber mills for a year's apprenticeship. The

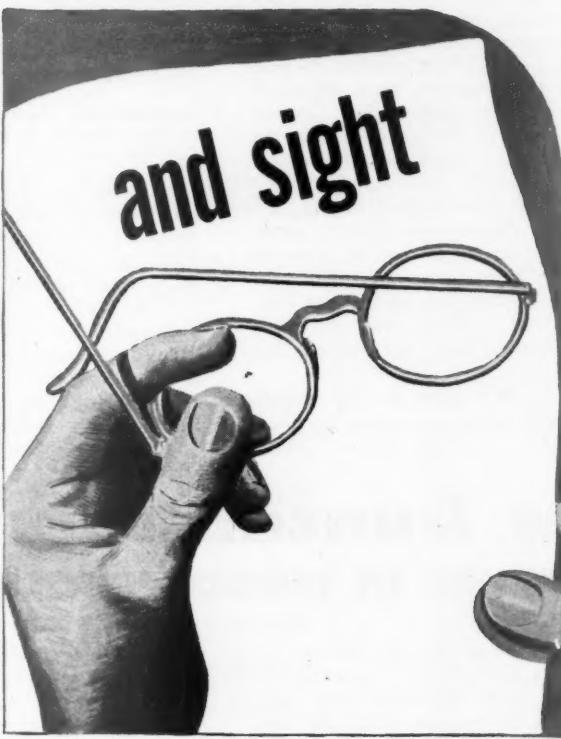
university will cooperate with other industries in time.

#### Thinning and Other Practices

During the field trip on the second day close attention was given not only to good practice but to results shown from "bad" cutting, which was purposely carried out in the 16 year old management tests.

On thinning in a natural stand, Dr. Korstian said to maintain a live crown on the upper 1/3 of the tree. Asked about

# Helps your coated paper sell



## The slicker "feel" and glossier appearance that NOPCO\* ESI imparts to coated stock . . . enhances its sales appeal

Though NOPCO ESI is a comparatively new product, it is looked on as an old friend in many coated paper mills. That's because this aqueous dispersion of an insoluble metallic soap helps in so many ways to give your coated stock the slick feel, the luster and smooth finish that denote a product of the highest grade.

You'll get the same fine results from NOPCO ESI, the same brightness, gloss and smooth finish whether you use the conventional or paper machine coating process . . . whether you use starch or casein as the adhesive in your clay coatings. You'll also find that NOPCO ESI improves flow and brushing characteristics.

NOPCO ESI reduces flaking and dusting . . . More and more mills report that NOPCO ESI reduces flaking and cracking and improves fold . . . thoroughly plasticizes pigment particles even after the coating has dried with

the result that dusting on the supercalenders is reduced, cleaner rolls and more efficient action assured. Some users even find NOPCO ESI useful in controlling foam in their coating composition.

**SIMPLE—STABLE . . .** NOPCO ESI is readily diluted to any desired concentration . . . gives a dispersion stable to both mild acids and alkalis.

**GOOD SUGGESTION** for manufacturers of uncoated folding box board . . . To improve your product from the printing standpoint—particularly when oil-base inks are employed—use NOPCO ESI with starch on the calender stack of the board machines.

**HOW TO GET THE WHOLE STORY . . .** If you—in common with many other mills—have difficulty in attaining uniformly satisfactory performance from clay coatings—write for complete particulars on NOPCO ESI.

**NOPCO CHEMICAL COMPANY, Harrison, N. J.**

Formerly National Oil Products Co.

Branches: BOSTON • CHICAGO • CEDARTOWN, GA. • RICHMOND, CALIF.

An Affiliate of the American Pulp and Paper Mills Superintendents Association

# NOPCO ESI



**Aqueous Dispersion of an  
Insoluble Metallic Soap**

\*Reg. U.S. Pat. Off.

EVOLVED THROUGH RESEARCH

AUGUST, 1948

81

a hardwood understory, he said thin the crop as needed and when you take the final crop go after the species you want for the stand. On stand conversion and cleaning he said cleaning cost them as much as planting; but could cost more.

In loblolly pine plantation thinning, he discussed taking out each eight row first, which provides a drive-in. Then next time the middle row of the remaining seven. Afterwards, use the crown method. Asked why a cut was not heavier, he said a measure of protection from effect of glaze, should one come. He advised against pruning. In discussing disease, he urged "grow the species" that fit naturally. Worst effects of disease show where the stand is bad (inadequate) anyway.

One demonstration was loblolly pine, cut with seed trees left but in a stand in which the trees were not sufficiently mature. In this area, he said, when loblolly trees have reached their optimum size for pulpwood they are big enough for seed.

Where the soil is good the hardwoods spring out when pines are taken, particu-



INTERNATIONAL PAPER'S CONSERVATION FORESTERS attending the Southern Pulpwood meeting. Left to right: CHARLES W. ROBERTSON, Natchitoches, La.; OSCAR J. TRACZEWITZ, Georgetown, S. C.; BARRY T. GRIFFITH, Dunn, N. C.; REX CAREY, Camden, Ark.; H. M. (Swede) ROLLER, Panama City, Fla.

larly the yellow poplar. This condition contrasts to that in Arkansas, where pines come in. Clear cutting in patches for loblolly has proven satisfactory.

T. S. Coile, professor of forest soils at Duke, stated the actual production of forest growth can be predicted from the soil it will grow on. The University is making soil tests in forests all along the Southeastern seaboard.

## New Duncan Bay Mills FIGURE IN WOOD REVOLUTION

Like the new Bloedel, Stewart & Welch kraft pulp mill now operating at Port Alberni, B. C., the new kraft pulp mill and newsprint mill to be built by Canadian Western Lumber Co. at Duncan Bay, on Vancouver Island, also will be based upon utilization of the wood residue from lumber and logging operations.

The successful operation of the twin mills at Duncan Bay may be an important step in "a wood-use revolution" now going on in the Pacific Northwest and lead to sweeping changes in the region's forest economy.

During the first years of the mills' operation most if not all of the raw material will come from the far-flung logging operations of Comox Logging & Railway Co., the big log-producing subsidiary of Canadian Western headed by R. J. Filberg as vice-president and general manager. However, the wood used will be forest debris and salvaged material resulting from primary sawlog operations, chiefly in the Nanaimo Lakes and Ladysmith and Comox areas.

HERE IS AN ARTIST'S SKETCH of the \$30,000,000 sulfite pulp mill project planned by Cananess Corp. of America at Port Edward, B. C. In background is the Skeena River, and in left foreground is shown deepwater dock and rail facilities. In enclosed basin is log pond, with jackladders rising to conveyors that carry pulpwood to sawmill and thence to pulp mill. Large building at right is to be occupied by the drying machines and pulp storage. Separate structure at far right is office building.

In an average year Comox produces about 200,000,000 feet of logs (equivalent to 400,000 cords), and it is estimated that about 25% of this total will be available as salvage wood, practically all hemlock, ideal for pulpwood purposes. This means that 50,000,000 feet of salvage logs, or 100,000 cords, will be available from the company's own holdings.

However, the company will not limit its source of supply to its own operations, especially in the years when, because of the vagaries of the sawlog market, the total cut of sawlogs may be reduced from the present average. The company plans to buy substantial volume of salvage material from other logging operations in the adjacent territory as well as from small wood lots to be operated by farmers, and other small timber holders.

### Vast Pulpwood Resources

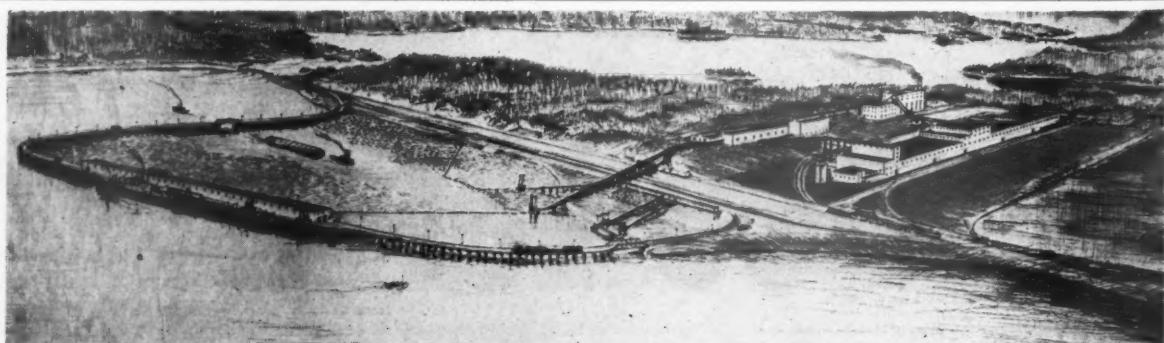
The ultimate amount of salvage material or small logs that may be available for pulping on the British Columbia coast is almost incalculable if scientific management and progressive utilization policy

is adopted. On the basis of a total log cut in the coastal region amounting to 2,000,000,000 feet, Comox accounts for roughly 10%. Thus, if the ratio of Comox's experience is applicable to the entire area, a total of 1,000,000 cords of pulpwood from salvaged material will be available.

Several natural factors favor such a development. One of them is that in a majority of heavy Douglas fir stands in the coastal area tributary to Duncan Bay the under-cover of small trees usually runs strongly to hemlock, the ideal pulpwood species, rather than to Douglas fir. This means that of the available forest debris left after primary Douglas fir logging a large proportion is of small hemlock, now assured a ready market. Because of the comparatively insignificant stature of the hemlock under cover in Douglas fir stands, the full potential of this source of supply has consistently been overlooked or neglected.

In harvesting this material application of the board foot measurement would not be economic, as in terms of board feet to be produced the cost of utilization would be out of line. However, the conversion of this material to cubic feet for pulpwood changes the picture completely. This is one of the key facts developed by Comox Logging & Railway Co. in its experiments with salvage logging on Vancouver Island during the past four years.

While Comox Logging & Railway Co. will depend on salvage material, as previously stated, for the next 20 years or perhaps longer, the pulp mills will need a guaranteed supply on a sustained yield basis, and that is probably the main reason for the company's application, through another Canadian Western subsidiary, for the 800,000-acre forest tract on Vancouver Island, the adjacent islands and part of the British Columbia mainland.



ng. Left  
ARRY T.

log cut  
2,000,  
oughly  
experi-  
area, a  
d from

a de-  
in a  
nds in  
n Bay  
usually  
pulp-  
as fir.  
forest  
log-  
hem-  
Be-  
ficiant  
er in  
rial of  
been

cation  
d not  
eet to  
would  
ersion  
wood  
is  
omox  
ments  
island

Co.  
revi-  
per-  
ed a  
yield  
ason  
ough  
, for  
uver  
rt of

# Flood Loss 30,000 Tons

## STRIKE ALSO REDUCES MARKET PULP

An authoritative survey of the actual tonnage production losses incurred in the mills along the Columbia River during the recent disastrous floods has been completed by **PULP & PAPER**. This survey shows losses in paper, insulating board and market pulp totalled more than 27,000 tons and probably about 30,000 tons, which is considerably more than the estimates previously made by the government and other earlier reports. Losses and repair work, calculated in dollars, will be at least several million dollars.

The loss in market pulp which normally goes to eastern paper mills was 5,225 tons, all in bleached sulfite made at the Longview, Wash., mill of Weyerhaeuser Timber Co. An equal amount of this pulp production also was lost due to the boom men's strike in May—a month prior to the flood, and not calculated in the round figure of 30,000 tons loss due to the flood. This meant loss of nearly 3% of national capacity.

All of the eight pulp and paper mills on the lower Columbia River were wholly or partially shut down for varying periods—for several days up to a month. In at least one plant a couple of machines were on continuous operation in spite of adverse conditions, thus keeping available a group of men at any time for emergency needs.

The first mill to close down was Columbia River Paper Mills, Vancouver, Wash. Production was stopped May 27, permitting removal of motors and pulp and paper stock. No. 3 machine resumed operation June 25, No. 2 on June 29 and No. 1 during the week of July 19. Lost production tonnage from the shut-down is reported as 3,500 tons of printing paper.

Crown Zellerbach Corp. mill at Camas operated the new No. 15 machine continuously, but the other machines were down for periods varying from 13 to 28 days, with, of course, considerably production loss.

North Portland Division of Western Waxed Paper Co., North Portland, Ore., was down the month of June and perhaps, this operation was more severely hit than any plant on the river, as far as concerns finished and unfinished paper stock. Lost production in finished paper approximates 1,400 tons, including both waxing and gumming plants. However, this loss is not calculated in totals because production was stepped up in the other two divisions in California.

Crown Zellerbach Corp., while releasing no figures on Camas, issued this report:

"Loss at Camas was confined to loss of production and expenses incurred to protect the plant and cleanup after flood waters receded, all merchandise, stocks and electrical equipment in flood areas having been moved to higher levels. Log

losses were minor. As yet, damages cannot be determined but are estimated at a net of \$1,500,000 (for both Camas and North Portland)."

Weyerhaeuser's pulp mill at Longview was out of operation because of flood conditions 19 days, accounting for the loss of 5,225 tons of bleached sulfite market pulp production. The plant closed down June 1, having been in operation only two weeks following the boom men's strike which ended May 18. The plant lost another 19 days' production, 5,225 tons, from the strike shut-down.

St. Helens Pulp & Paper Co., St. Helens, Ore., lost production of 5,000 tons of bleached and unbleached kraft paper during mill stoppage from May 29 to June 28.

Pacific Paperboard Co., Longview, lost 300 tons of production because of the flood. No. 4 machine produced continuously on newsprint, but machines 1, 2 and 3 were operated intermittently on paperboard. Rail movement to or from the mill was cut off 21 days.

Lost tonnage figures for Longview Fibre Co., Longview, were not available, but production was completely stopped for several days and the plant continued on a partial production basis for two weeks before resuming normal operation.

Fir-Tex Insulating Board Co., St. Helens, was inoperative for 20 days, thus losing 2,340 tons of insulating board production.



NEW OFFICERS OF HAWLEY Pulp & Paper Co., Oregon City, Ore., announced in this magazine last month (left to right): NORMAN CHANDLER, new President, who is publisher of the Los Angeles Times. PHILIP CHANDLER, Vice President and General Manager of the Times, who was elected a Vice President of Hawley and CARL E. BRAUN, Vice President and Mill Manager. Within a few months the company's name will be changed to Publishers Paper Co., Mr. Norman Chandler has announced.

### Change to Newsprint At Hawley Pulp & Paper

Paper machines No. 1 and 3 of Hawley Pulp & Paper Co., Oregon City, Ore., were changed over to the manufacture of newsprint in April. No. 1 formerly made wrapping paper and No. 3 previously made toweling and wrap. No. 4, the large machine, continues on newsprint and No. 2 machine, smallest of the four, is still making fruit wrap and toilet.

### National Container Acquires Plant in Minnesota

National Container Corp. has acquired the former Kraft Containers, Inc., converting plant in Minneapolis and organized it as a wholly owned subsidiary under the name of National Container Corp. of Minnesota.

This is the 10th converting plant acquired by National Container, all served with kraft board from the company's own board mills.

### Kalamazoo Safety Council Visits Mills for Surveys

MacSimBar Paper Co., Otsego, Mich., and Kalamazoo Vegetable Parchment Co., Parchment, Mich., have been visited by the Kalamazoo Safety Council and "successful studies" have been made to reduce accident frequency in these plants, according to James Lewis, director of the council.

Plant visitations are a new innovation by the council and already there is a "waiting list" of mills.

KIMBERLY-CLARK CORP. has renewed its research fellowships at the University of Wisconsin and Massachusetts Institute of Technology for the 1948-49 school year, according to H. A. Rothchild, technical director of Kimberly-Clark and chairman of its committee on fellowships, which also includes Mr. R. W. Lyons, Assistant Vice-president and Manager of Woodlands, and W. H. Swanson, Chief-of-staff.



Where flanged connections are indicated for your piping system, **ESCO** Stainless Steel Flanges will serve you best.

They resist corrosion for the lifetime of the piping system.

Adaptable for quick assembly and disassembly of piping.

Interchangeable with standard flanges.

Selection of companion, slip-on, blind, reducing, and Van Stone types.

**ESCO** companion flanges have sharp, clean cut threads, comply with exacting

tolerances. They are threaded to insure exact 90 degree angle of thread to face.

Accurately machined to full dimensions.

Rigidly inspected.

Carried in stock to 150 pounds ASA standards, in complete range of sizes from 1/2 inch to 12 inch. Flanges for pressures above 150 pounds, promptly available on special order.

**ESCO** Stainless Steel flanges may be ordered from the **ESCO** office nearest you. Or fill in and mail the coupon below.

# ESCO

STAINLESS STEEL  
FOR ULTIMATE ECONOMY

## ELECTRIC STEEL FOUNDRY

2166 N. W. 25th AVENUE • PORTLAND 10, OREGON

### OFFICES

CHICAGO, ILLINOIS  
EUGENE, OREGON  
HONOLULU, T. H.

LOS ANGELES, CALIF.  
NEW YORK CITY, N.Y.

SAN FRANCISCO, CALIF.  
SEATTLE, WASH.  
SPOKANE, WASH.

IN CANADA — **ESCO** LIMITED, VANCOUVER, B. C.

AUGUST, 1948

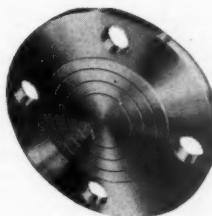
# ESCO

## STAINLESS STEEL FLANGES

necessary complements  
for piping installations!



SLIP-ON



BLIND



VAN STONE

ELECTRIC STEEL FOUNDRY  
2166 N.W. 25th Avenue, Portland 10, Oregon

Please send data and prices on **ESCO**

Companion  Slip-on  Blind  Reducing  
 Van Stone

Name \_\_\_\_\_

Address \_\_\_\_\_ Zone \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

# The "Good Business" of Housekeeping

THIS PAPER WON CUNNINGHAM AWARD For 1948 IN SOUTHERN CALIFORNIA

By Conrad C. Thiel

Superintendent, U. S. Gypsum Co., Los Angeles

The success of any business is dependent upon its ability to excell in safety, quality, costs, production and housekeeping. These are the fundamentals of any operation, department, or plant. It doesn't matter if it is a crew, shift, or department that we are responsible for, we must recognize that before we can do a good job, we must have done it safely, turned out a quality job, at highest production and lowest cost with good housekeeping. It is impossible to divorce one from the other. They go hand in hand. Therefore, it is logical that in any discussion of any one of these items, we should discuss how it affects the others.

Probably the two most closely related of these five fundamentals of good business are housekeeping and safety. It is practically impossible to conceive of a safe plant with poor housekeeping. It is a fact that poor housekeeping can be found to be one of the causes of practically every accident or at least to have contributed to it. What would be some examples? There are numerous examples in paper mills. The practice of allowing tie wires from the bales to collect disorderly on the floor presents a stumbling hazard. Or the wires dangling down from the pipe lines, etc., are a booby trap to put out an eye. Incorrect stacking presents a hazard; grease and oil is a slippery hazard. If there is not a place for everything and it is kept there, safety is involved.

This could be exemplified by a recent near-accident to an oiler. Pike poles with a sharp metal point are used to cut paper off the wrapped dryer. The person who last used the pole, instead of hanging it in the rack, left it laying down. The oiler came rushing by and the steel point went through his shoe and stuck into his foot. We can readily see that this was poor housekeeping for it was not orderly house and, because it was not, an accident very nearly was experienced.

There are other examples: The collection of dust and dirt on rafters and equipment is hazardous not only to our employees, but to our equipment. Safety and housekeeping are very closely related. The one thing that can be done to assure a good safety record is to insist on good housekeeping.

Housekeeping affects the quality of products. Good housekeeping will tend to produce good quality and vice versa. The collection of dirt, dust, grime and oil on equipment can drop off into the product and be the cause of rejection or complaint. Quite often inspectors are depended upon to overcome this by trimming or throwing out low quality products. Yet it is known they can not be 100% efficient. They correct a result and not a cause. Get your house in order and the inspectors will have an easier job. There will be less quality trouble and the plant appearance will improve. Now not only does visible poor housekeeping affect quality, but the housekeeping hid inside of equipment affects it. How can this be? Suppose a pipe

line is allowed to fill up with slime, dirt or sludge. The line can not efficiently carry the water, for example, in the quantities necessary. And also as the "crud" sluffs off, it goes into the product and this is a serious problem in paper mills. Therefore, one can not always be smug in his belief that he has good housekeeping if the outside of his equipment is in good order. Lift the lid! Good housekeeping is very definitely a great help in the production of a high quality product. Go through a food processing plant where state and federal laws require excellent housekeeping because it has been proven that an orderly house is conducive to highest possible quality.

Costs! Yes, good housekeeping is an aid in meeting standards. It has already been seen that it will increase quality, and by doing this, the number of quality complaints and their resulting chargebacks will be reduced.

The example of dirt and grime in equipment not only results in sub-standard quality, but also can and quite often does result in interruptions in operations. The sluffing off of foreign materials can cause breaks with resultant lost time and waste. This is costly for it is only by staying in continued opera-

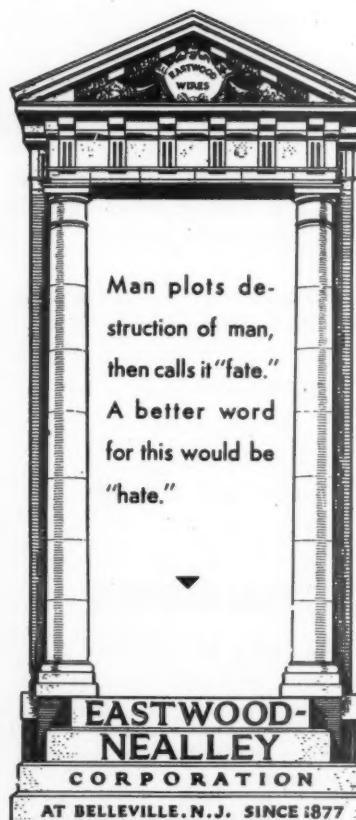
tions that we can meet standard costs. Poor housekeeping can result also in operations at reduced speeds. If due to poor housekeeping of our equipment, the wire is allowed to become dirty, its efficiency of formation is impaired and it is necessary to run at reduced speeds with resultant low quality, low production. This increases unit cost. There is one other interdependency of costs and housekeeping.

One of the most important functions that it is necessary to control if good costs are to be made is formulation. In other words, the efficient usage of raw materials. Too much emphasis can not be put on this. In any of our operations, nothing new is being created. Raw materials are rearranged and recombined to give a desired product. Mill operations add to this raw material horsepower, steam and man power. Good housekeeping will aid in these efforts. For example, poor housekeeping in the storing or warehousing of raw materials results in disorderliness which in turn results in loss of material or waste. It also results in wrong formulation.

If raw materials are haphazardly stored, employees can not be expected to at all times get the correct material at the correct time. This is serious, for all processes demand that raw materials be used in the correct proportions. If this is not done, it is very apparent that the results will hinder production, produce confusion, and substandard products that result in increased costs due to poor housekeeping. The same can be said of warehousing or handling of the finished product. A great deal of expense and trouble is entailed producing a product at a minimum cost. Then quite often poor housekeeping is allowed to spoil the good job that has been done. The products are stored in such a manner that they are damaged, or stencils are put on blotched up, or someone scribbles the batch number. That's poor housekeeping, and workmanship just as sure as a dirty floor is. All of this increases costs for it produces waste, complaints and buyer resistance. Yes, costs are affected by housekeeping.

Production can be and is affected by housekeeping. In all our other comparisons this has been pointed out. For off-quality product reduces production due to rejection of material; even safety affects production. For an accident is an interruption in the orderly procedure of an operation, and certainly an interruption hinders production. This is wasted manpower. Get housekeeping in order and derive the fruit of improved production.

Besides affecting these five fundamentals, there is one other point that should be brought out. That is morale. Don't overlook this one thing that is all-important. If employees of a department have high morale that department will lick any problem that can be tossed its way. As an example of this. Speed of operation had been discussed and emphasized. The other day a backtender,



THE AMERICAN PULP AND PAPER MILL  
SUPERINTENDENTS ASSOCIATION, INC.

*Recent Publications*

**"CHEMICALS USED IN THE  
PAPER INDUSTRY"**

**"PREVENTIVE MAINTENANCE  
IN PULP AND PAPER MILLS"**

*May be purchased from publisher:*

**H. S. COBB PRINTING COMPANY  
CUMBERLAND MILLS, MAINE**

ASSOCIATION OFFICE  
220 East 42nd Street  
NEW YORK 17, N.Y.

BRANCH OFFICE  
38 So. Dearborn St.  
CHICAGO 3, ILLINOIS



## This STEBBINS Tank Leads A DOUBLE LIFE...

For example, one 40' diameter Stebbins Semtile Tank is covered with a single span circular slab — supports two deckers, a conveyor and a building over the equipment.

Semtile tanks are actually *stronger* when they carry a load because compression is set up in the wall which materially aids in resisting temperature and shrinkage stresses.

Yes, Semtile tanks save space without compromising sound design. When you have a tank problem, consult Stebbins.



in answer to how fast he was going, said 310. Further discussion of the importance of speed followed. At the time he was going 310; the machine was apparently doing all it could. About half an hour later, he called the foreman over, and, all smiles, said, "I just got another two feet out of her and I think I can get a little more." That is high morale. There are many things that contribute to it, and one of these is housekeeping. What is your attitude when you walk into a messy plant? You immediately are thrown into a depressive mood, whether you realize it or not. On the other hand, if the plant is clean and orderly, your attitude is clean and orderly. And by being in this frame of mind, you are one step farther along the way to high morale.

A person normally does not like to work in a disorderly place. So, insist that employees maintain good housekeeping. They and the department will benefit, for their morale will be much better.

It has been seen how housekeeping affects the departmental success. It is known what the results will be. The next move is to consider some plan to control it. The prime purpose of any plan must be to get each individual employee to do a good job of housekeeping. This is a point that must at all times be considered. Before it is known where conditions need to be improved, it must be known what conditions exist, where they exist and the contributing causes. How else can this be determined other than by going and looking and seeing what you look at? Therefore, an inspection must be made. It is not meant to mentally note down things while walking to a trouble spot. That's not an inspection. In the first place, housekeeping is

secondary. To be a success, an inspection must be made with one purpose in mind and that is housekeeping: and do not depend on mental notes—take along a pencil and paper and note them down. Crawl into every corner you can, open doors, climb ladders, go up on the roof. Don't just look ahead—every once in a while, turn around and see where you have been. Probably something will be seen hidden behind a column. If this is conscientiously done, an inspection of any department can be made and well over a hundred items—regardless of how recently a cleanup has been made—can be noted down.

It must be known what conditions exist before anything can be done about them.

After the conditions have been determined, the next thing to do is take the list and subdivide it as to responsibilities. Is the condition one of mechanical or is it operating? If it is mechanical, determine the correction to stop the condition. Analyze it and see if an alteration can correct the cause of the condition ever again being a housekeeping item. If the condition is operating, set up a schedule for the proper permanent correction and decide whose responsibility it will be.

Now, so far the plan has been all planning and no execution. The best plan in the world is not worth anything unless we do something about it. The people who are going to do something about it are the employees. Therefore, they must be informed as to the poor housekeeping conditions that exist, how it can be corrected and what it will mean to them. Meetings held with the shifts will get them to thinking and give them the overall picture of what is expected. It will help them to set high standards. Discuss with them general practices that

are detrimental. Make them realize that it is insisted that they maintain good housekeeping. Getting together one shift a week for 15 minutes will pay big dividends.

With these meetings, the stage will be set for specific examples. This can be done best by on-the-job instructions. Let the man see, feel and smell just what is being talked about. The impression will be more lasting. Talk over with him how it can be corrected. Try to get the man to point out the bad spots. Let him say how he is going to correct it. It then becomes his idea—and everyone works harder on his own ideas than on someone else's. Make it a practice to discuss the job operations with the operator. It will pay dividends not only in housekeeping, but in all those fundamentals of good business. In any such discussion, there will be criticism. If it is carried out properly, the department will benefit. If not, a bad condition is made worse. Make the criticism constructive so that the employee will understand what is wanted, how to do it, and why he should do it. It is always good practice to compliment before your criticize. A plan has been instituted. What is the next step? Follow it up! See that the job is done. If the same item keeps coming back on the list, it is known that the corrective measure was not right. Find the right means. Make sure that the employees know that it is meant and also that they will receive help.

The interdependency of the fundamentals of successful operations have been shown. It has been shown how housekeeping can materially aid the department. A plan has been developed; a method of carrying it out has been suggested. The problem has been analyzed and a method of attack has been developed. Execution and follow-up have been planned. These are the steps to follow in the solution of any problem. Will you try them on housekeeping?

### Barrell's Annual Is Ready for 1948

The seventh volume of Barrell's Paper Annual is ready for distribution as a free service to members of the industry from manufacturers of Siamese and Tour Boss dryer felts.

The only complete and up-to-date directory available of industry association officials has been expanded. Three feature articles, well illustrated, make up the front matter of Volume VII: "A Bird's-eye View" of the industry by E. W. Tinker, executive secretary of the American Pulp & Paper Association; first of a series on "Great American Research Laboratories" (Hercules Powder Co.), and "How Uncle Sam Buys Paper," by M. S. Kantrowitz, technical director of the U. S. Government Printing Office.

This volume is attractively printed under direction of The Callaway Associates, Boston, and copies may be obtained without charge from William L. Barrell Co., Lawrence, Mass.

**PULP & PAPER**



**We're forced  
to admit it**

From time to time we have modestly let it be known that things are going well at Moore & White. Without fanfare, then—although we are sorely tempted—we submit a few bald but significant statistics.

Business on Moore & White books is ten times what it was when new management took the reins two years ago. Accounts are ten times the number then . . . new customers, and many old ones who have returned to the fold, bringing their major paper-making problems with them.

Productive floor space has been doubled in those two years. Existing equipment has been thoroughly modernized and supplemented by new machine tools where needed to create a well-balanced production set-up. Personnel—more than quadrupled—includes a new team of seasoned engineers and sales-engineers whose com-

petence is well known and respected in the paper-making industry.

We can't stress the magnitude of our backlog without facing-up to the matter of deliveries. They're better than you might suppose. Finished work is leaving our plant in ever-increasing volume. We'll do our level best to meet *your* requirements.

**The MOORE & WHITE Company**  
15TH STREET AND LEHIGH AVENUE • PHILADELPHIA 32, PA.  
CUSTOM-BUILT MACHINES FOR MAKERS OF PAPER AND PAPERBOARD

## Infra-Red or Radiant Heat for Drying

Under modern competitive conditions, with existing labor costs and overhead, it is highly important that all drying of paper on the machines and of coating and printing be accompanied as quickly as possible. With some products a definite time factor is involved. Any attempt to accelerate drying beyond reasonable limits would effect the finished product—this is particularly true of heavier papers and board. In paper making the actual weight of the water which has to be removed runs into the hundreds of pounds per hour and, in the case of heavier papers, into tons per hour. Paper machines operating at high speed make it important to evaporate a large volume of water in the shortest possible time, and within reasonable limitations as far as space is concerned.

Steam has long been the accepted source of heat for paper drying, and it has done a good job. There is always, however, the desire and the economic urge to further increase drying speeds, thereby increasing output and, most important, the profits. Under practical conditions steam temperatures can be carried just so far, and then a ceiling is reached due to pressure limitations. To increase speed by adding dryers frequently entails not only a substantial investment for the dryers themselves, but additional space which is not always available. Then too, additional dryers require additional steam which may mean that additional boiler capacity

By G. R. Van Kampen

*Mr. Van Kampen, sales manager of Red-Ray Manufacturing Co., New York City, presented this paper at a meeting March 18 of Paper Makers and Associates of Southern California in Los Angeles.*

**Use of gas burners or rays of one kind or another for faster drying of paper is being made in several mills, including the Los Angeles area. One mill in that region reports a 10% increase in drying production.**

would be required. This presents a more serious problem.

The logical solution in many cases is additional sources of heat and means of applying this heat. The textile industry found that through the addition of gas burners it was possible to increase their drying speeds without the addition of further steam equipment. Now certain paper mills have adopted gas burners as a means of speeding up their drying.

### Radiant Heat

In recent years, infra-red or radiant heat has been widely proclaimed as the drying miracle. Startling claims have

been made as to the magic drying properties of infra-red lamps and infra-red or radiant gas burners.

With any new development, there is great danger of over-enthusiasm. People read and hear of amazing claims and form opinions based on superficial knowledge. They are prone to accept the theory that a new development is the forerunner of another era. This has been particularly true of infra-red or radiant heat. It is a general misconception that by means of infra-red waves heat may be imparted to the interior of a piece of material and actual drying accomplished outward from the center. The public seems to have jumped to the conclusion that here is a combination of x-ray and heat ray which will penetrate any material and, in some magic way, eliminate water or other solvents and vehicles from the interior of an object.

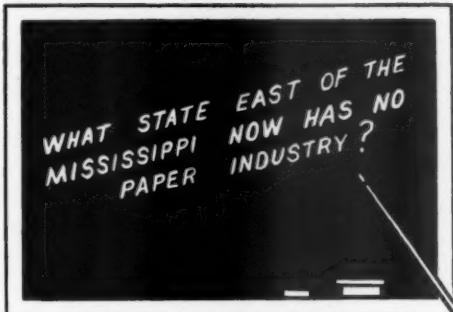
That is just so much bunk! And it is most unfortunate. Eventually there may be disillusionment and a tendency to underestimate the real value of infra-red or radiant heat. You will note that I say infra-red OR radiant heat. Actually the terms are practically synonymous. Infra-red refers to heat in wave form, the waves being of such length that they are just beyond the range of human vision. In other words, the heat waves emitted by a heated body. These heat waves will travel through air without interruption, but when they reach a solid material—

**AMYLCO**

An enzyme product  
for preparing superior coatings  
and tub-sizings from starch.

THE AMYLCO COMPANY, INC. 140 Madison Avenue, New York 16, N.Y.

## What do you know about Paper?



### DRAPER'S ATLAS of AMERICAN PAPERMAKING

containing 37 maps of the States where paper is made, together with important facts and figures, answers many interesting questions and shows plant locations.

This forty-four-page book, cloth bound in board, will be mailed free on application to anyone actually engaged in pulp or papermaking. To others, the price is \$2.00 postpaid, while the edition lasts.

*The* **DRAPER** *Felt*

### DRAPER BROTHERS COMPANY

Woolen Manufacturers Since 1856

CANTON, MASSACHUSETTS

BRADFORD WEST  
Pittsfield, Mass.

WILLIAM N. CONNOR, Jr.  
Canton, Mass.

WALTER A. SALMONSON  
519-20 White Bldg., Seattle, Wash.

L. H. BREYFOGLE  
Kalamazoo, Mich.

L. L. GRIFFITHS, Jr.  
Kalamazoo, Mich.

Answer to Question No. 4

The State of Kentucky



**RUBBER COVERED CONVEYOR BELT**  
**RUBBER TRANSMISSION BELT**  
**PAPER MILL HOSE**  
**YARWAY STEAM TRAPS**  
**LEATHER BELTING**  
**FIRE HOSE**  
**CONDERSITE PULLEY LAGGING**

*Write for Prices*

**GENERAL RUBBER & SUPPLY CO.**  
101 S.W. First Avenue — ATwater 6565

PORTLAND, OREGON

AUGUST, 1948

that is a material which is opaque to the waves—they generate heat upon the surface of this material. There is no mysterious penetration to the center in any appreciable amount. The heat is generated where the waves are stopped, usually on or very near the surface.

#### Radiant Gas Burners

Typical radiant burners are pressure burners. A carefully proportioned mixture of gas and air is delivered under pressure to a refractory surface. The mixture burns on and in the somewhat porous surface of the refractory, heating it to a red glow or a dazzling white, according to the throttle setting.

The radiant burner, being practically flameless, will operate equally well in an inverted position. This makes it possible to locate burners both above and below material being dried, or, when desirable, all burners may be located above the material.

It is true that all of the heat is not in the form of radiant heat. There is a considerable portion of heat in the form of heated air and hot products of combustion. Most of this heat can be used—somewhat more when burners are located below the material than when located above the material. However, careful checking of results with actual installations shows that there is not a great difference in efficiency between burners located above the material and those located below the material.

Heated air is a widely used drying medium and here we have it as a by-product just as usable as if it were provided by some other source. There is the additional advantage that it is at a temperature higher than that of air supplied by regular hot air systems. This increases the moisture absorbing capacity of this air.

The fact that radiant burners are practically flameless is of particular importance. Excessive flame will discolor and scorch material even though there is no great volume of heat in the flame itself. Radiant burners deliver a much greater amount of heat without these harmful effects.

Actual results show that properly installed radiant burners will deliver to the wet paper more heat within a given space than any other heat source in practical use. When we mention refractory temperatures of over 2,000 degrees, you, no doubt, wonder what this would do to the paper we are drying. Bear in mind that we are working at the wet end of the machine. The paper contains a large percentage of moisture. As the heat is transferred to the wet surface, a rapid evaporation takes place, absorbing the heat and retaining a safe temperature within the material.

Careful checks have shown that, even in the case of light papers, such as tissues, dangerously high temperatures are not reached in the paper itself.

As most generally used, the great advantage offered by radiant burners is in increasing overall drying speed through the rapid transfer of heat at the wet end, thereby helping the dryers rather than attempting to supplant them.

The ideal burner location is below bottom of first dryers with burners in an upright position directed at the material on the dryers. When burners are located in this manner, the radiant heat is directed right at the material and the surplus heated air and products of combustion flow upward around the dryers,

maintaining a higher temperature in that area and further accelerating the drying. This location is only practical when a pit of sufficient depth is available below the dryers.

A light tension switch, making contact with the web, will turn the burners off instantly in the event of paper breakage. In a recent installation of this type an electric eye was installed in the pit in such a manner that, when the "broke" reached a certain level the burners would be turned off.

Where there is no pit, or where there is an objection to locating burners under the dryers, they may be located in an inverted position above the first two or three or more dryers, depending upon the number of burners to be used.

Some mills prefer to locate burners above and below material, between last press roll and first dryer, where there is space available at this point. If paper broke directly over burners, the tail would be pulled away from burners and the following portion would fall below. Actually, at this stage, the paper cannot be ignited from burners unless it is first dried.

#### Burner Controls

When burners are turned off, the refractories cool very rapidly. Actually the gas is cut off from the mixture and the air continues to flow, exerting a further cooling action.

It is general practice to interlock the burner controls with those of the machine so that if the machine is stopped for any reason the burners will be turned off automatically. A tension switch can

be used to turn burners off in the event of paper breakage.

Further protection may be provided in the form of a centrifugal relay operated in connection with the dryers. This will turn the burners off if the dryers stop due to power failure or failure of the drive mechanism. Each burner is provided with an individual venturi mixer. Air from the compressor is delivered to this mixer through a line containing only air. Gas is delivered through a separate line. In the mixer, which is attached directly to the burner manifold, the high velocity air insipitates a regulated quantity of gas and delivers a properly proportioned mixture to the burners.

When burners are located in an oven or some form of enclosure, combustion safeguards of the flame-rod type are used. By means of electronic controls and relays, these hold the gas valves in open position.

If combustion ceases for any reason an alarm sounds and a safety shut-off valve effects a positive shutting off of gas. A time delay relay with air flow switch provides a purging period before burners may be relighted. Failure of exhaust system will also throw burner controls into safety position.

#### Drying Capacity

The efficiency of each installation varies somewhat, depending upon location of burners, type of material being dried, moisture content of material, operating speed and numerous other factors.

A careful check of existing installations shows that, under average conditions, at the wet end burners will in-

crease the evaporation by from two to two and one-half pounds of water per hour per linear inch of burner. For example, if a battery of 70-inch burners are used, the moisture removal will be increased by 140 to 175 pounds per hour, or 3360 pounds to 4200 pounds per 24 hours per burner.

Actual experience shows that under average conditions adding one burner to the line increases the drying by the same amount as adding one and a half or more dryers. For example, six burners added to 72 dryers increased the drying by 15% equal to adding 10.8 dryers. Two burners installed with 70 dryers increased the drying 7%—equal to the addition of 4.9 dryers. Three burners used with 51 dryers increased the drying by 9.38% or the equivalent of 4.8 additional dryers.

Dryers were operated at pressures of 50 pounds or slightly higher.

#### Drying Coatings and Board

It would be possible and practical to use more burners and obtain greater increases in drying, as far as drying itself is concerned. However, in most plants there are other factors which limit the speed of the entire paper making operation. There is no point in increasing the drying out of proportion to the capacity of the other equipment.

Each of these installations was simple—no extra space was required. The time involved averaged three days per job.

Coatings on board are readily dried with radiant burners after carefully determining the correct space between burners and the material.

In one mill, calender rolls had previously been heated by electric strip

**Lyddon  
and Company  
(America) Inc.**

**Exporters of  
wood pulp to  
all the world**

10 EAST 40<sup>TH</sup> STREET,  
NEW YORK 16, N. Y.

**Parsons  
and  
Whittemore, Inc.**

**World-Wide  
Paper Exporters**

**Wood Pulp**

LONDON  
PARIS  
STOCKHOLM  
MONTREAL  
SAO PAULO

**PULP  
PAPER**

OSLO  
SOUSSE  
BUENOS AIRES

## FASTER CUTTING



You'll be amazed how quickly and easily you can cut virtually any special length or shape from the hardest masonry materials. Clippers save time — save material, assure better workmanship on every job.

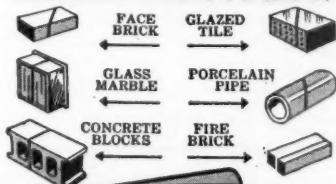


With the exclusive Clipper design, proven throughout the world and guaranteed to provide the fastest cutting speed and the lowest cutting costs.



DUSTLESS MASONRY CUTTING so fast and easy. Just turn on the circulating water system and slice through the hardest masonry materials. Foot Pedal control for varying material sizes or lock the cutting head at a set position, whichever is desired.

### CLIPPER MAKES THESE CUTS IN SECONDS



**THE CLIPPER MFG. CO.**  
2818 WARWICK • KANSAS CITY 8, MO.  
PHILADELPHIA CLEVELAND ST. LOUIS AUSTIN, TEX.

AUGUST, 1948

### FOR SALE

P & J Fourdrinier section. Wire 133" x 61' 2". Couch rolls. Brest roll. Wire rolls and Table rolls. Cone drive and shake. Box No. 13, Pulp & Paper.

### WOODLANDS SUPERINTENDENT—

Desires change, 13 years' forestry experience, 6 years in charge of land acquisition, management, and pulpwood production for large paper mill. Forestry graduate; 34 years of age. Reply Box 10, Pulp & Paper, 71 Columbia St., Seattle 4, Wn.

### FOR SALE

McIntosh & Seymour Tandem Compound Engine No. 1540. 16" diameter high pressure — 33" diameter low pressure, 38" stroke, 130 R.P.M., rated 500 h.p. Has with it Twin Beam Vertical Marine Jet Condensor Pump 10x15x22.

Crane & Co., Dalton, Mass.

beaters mounted inside the rolls. These required frequent attention and replacement because of moisture conditions. Burners applied externally maintained the rolls at desired temperature of 450 degrees F.

The drying of board and other relatively thick materials can be speeded through the use of radiant burners but, here again, the impossible must not be expected. Neither radiant burners nor infra-red lamps will instantly transmit a great amount of heat to the interior of heavy board. Heat could be developed inside the board by induction but this is not economically practical and would involve extensive equipment and attention.

Radiant burners will deliver to the surface of the board a greater amount of heat than steam dryers or heated air within a given time and space.

Time is essential for diffusion of the heat. This determines the rate at which heat may be applied.

The ideal method of utilizing radiant burners in this connection is as pre-heaters, and then as intermittent boosters.

### Fuel

The gas cost varies widely in different areas. Where cheap natural gas is available radiant burners can evaporate water at a lower cost than any heat source.

The fuel is burned and the heat generated right at point of use and applied directly. The efficiency is greater than when fuel is burned in a boiler at a distant point and the heat then transmitted in the form of steam to dryers or to an air heater and then delivered to the material through heated air.

The gas consumption of the burners to which I refer is 7 cu. ft. of natural gas per hour per linear inch of burner. Therefore, a 70-inch burner would consume 490 cu. ft. of gas per hour.

If the price for natural gas were 12c per thousand cubic feet it would cost 5.9/10c (.059c) per hour to operate a 70-inch burner. If the price for gas were 20c, the cost per hour would be 9.8/10c (.098c) per 70-inch burner. When manufactured gas is used, the cost is considerably higher. If propane gas is used the cost is also higher than that for natural gas and varies widely according to location and quantity purchased.

It is interesting to compare the cost of drying by radiant gas burners with that of drying by infra-red lamps. Both show about the same efficiency in utilization of energy but the total heat differs greatly. With the radiant burners the heat is emitted from a refractory surface of relatively large area. In the case of lamps the heat is emitted from a very small glowing filament.

**FOR SALE — 15" x 30" x 36" McIntosh and Seymour compound steam engine.** Approximately 400 hp, 12' x 25' groove split fly wheel for rope drive. Total weight approximately 60 tons. Good condition. Wire or write Crown Zellerbach Corporation, 1400 Public Service Building, Portland, Oregon.

## AMERICAN MACHINERY & ELECTRIC CO.

### NEW & REBUILT MOTORS & GENERATORS

#### AVAILABLE IMMEDIATELY

- 1 AC used 2190HP 300RPM 3/60/2300 Sync.
- 1 AC used 1500HP 164RPM 3/60/2300 Sync.
- 1 GE New 1000HP 900RPM 3/60/2300 Sync.
- 1 EM New 500HP 120RPM 3/60/2000/4000 Sync.
- 1 GE New 1000HP 900RPM 3/60/2300 Sync.
- 1 GE used 1250HP 100RPM 3/60/2300 Sync.
- 1 W 250HP 540/3000RPM 230 V DC Motor
- 1 GE used 750HP 720 RPM 3/60/2300 Sync.

#### COMPLETE LINE FAIRBANKS MORSE PUMPS

2403 50<sup>th</sup> TACOMA WAY TACOMA, WN.

tion of energy but the total heat differs greatly. With the radiant burners the heat is emitted from a refractory surface of relatively large area. In the case of lamps the heat is emitted from a very small glowing filament.

Bear in mind that the evaporation of water requires a large amount of heat regardless of the heat source. Each pound of water requires a definite number of heat units or B.t.u.'s for evaporation, whether from gas, steam or electricity.

Let's see how this works out in practical applications.

Four 70-inch burners would have a capacity of 1,960,000 B.t.u. This is the heat equivalent of 574 kilowatts and would under average conditions evaporate in excess of 560 pounds of water per hour. With 20c natural gas, the cost would be 40c per hour—with ½c electricity the cost would be \$2.87 per hour. If 12c gas were used, the cost would be 24c per hour.

Then consider the space required. If 500-watt lamps were used, 1148 would be needed; if 250-watt lamps were used, it would take 2196 lamps. The space required would make this entirely impractical and the maintenance would be terrific.

Cost of equipment is something which cannot be ignored. Prices vary widely with the number of burners used, length of burners and the type of controls furnished. To mention figures taken from recent quotations:

Price of four 70-inch burners was about \$3,400.00. On another job the price was just under \$4,000 for the 70-inch burners. An installation of eight 28-inch burners cost roughly \$3,000.

All prices include burners with manifold, pilots, venturi mixers, filter for combustion air, motor and centrifugal compressor, electrical controls, gas controls and supervision of installation. Maintenance on radiant burners is slight.

**STRATHMORE PAPER CO.** won this year's direct mail award offered by the National Industrial Advertisers Association, sharing the honors with their advertising agency, Abbott, Kimball of New York. Hercules Powder took the award for institutional advertising. Their agency is Fuller, Smith & Ross.



## Pacific Coast Supply Company

PORTLAND, OREGON - SAN FRANCISCO, CALIFORNIA

### "Contract Unique" Book By Downingtown Mfg. Co.

An elaborate, plastic-bound book has been sent out by Downingtown Mfg. Co., Downingtown, Pa., commemorating their "Contract Unique" with the United States Gypsum Co.

Very attractively, it tells how Downingtown was called upon by U. S. Gypsum to design and build two high capacity, combination felt and liner board machines and furnish all of the stock preparation equipment for two complete new mills in Los Angeles and Clark, N. J.

This was "Contract Unique" in the paper industry because of its size, scope and responsibility, says the book, complete manufacturing equipment from raw material to finished product being furnished.

"We and our sub-contractors delivered this equipment on schedule, despite the harassing strikes in steel, coal, copper and numerous other industries, under the able leadership of our former president, Edward T. Street," it reported.

This page bears the signature of Enright A. Ellis, president of the Downingtown Manufacturing Co.

Major units of machinery in this contract were: 4 waste paper conveyors, 4 Hydrapulpers, 7 classifin-

ers, 16 jordans, 4 Hydrafiners, 28 screens (Packer), 18 Nofome mix boxes, 2 combination felt and liner board machines including the following—18 vats and hoppers, 16 suction rolls, 215 dryers, 4 calender stacks, 121 pumps, and 390 electric motors (14,343 hp.).

The profusely illustrated book is 11" by 14" and contains 28 pages plus two 6-page open-out sheets, laminated with cellophane on both sides. As these pages are opened, each bears a statement emphasizing the gigantic size of this contract, as follows: (1) 182 freight carloads, (2) 3948 tons of equipment, (3) 105 tons of brass, bronze and copper, (4) 2950 tons of cast iron, (5) 73 tons of stainless steel, and (6) 37 tons of rubber.

This book was planned, written and designed by Eugene A. Holland (Industrial and Technical Advertising), Philadelphia, who has handled the Downingtown advertising for over 20 years.

**NEWSPRINT OF ANY SIZE**, in rolls or sheets, Canadian or Scandinavian, is offered for sale in classified ads in the most recent issue of *Editor & Publisher*. Seven ads appear; only one quotes a price—\$174 a ton.

### J. L. Perkins III Becomes Holyoke Firm Vice President

John Lewis Perkins, III, has been appointed vice-president and general sales manager of B. F. Perkins & Son, Inc., manufacturers of paper and textile finishing machinery, Holyoke, Mass., founded by his great grandfather in 1873 and celebrating its Diamond Jubilee year.

Mr. Perkins, who is 28, matriculated at Worcester Polytechnic Institute and withdrew two years later to join the United States Army Air Forces where he was commissioned a lieutenant.

### Gottesman Announces "Purocell" Wood Pulp

Gottesman & Co., Inc., New York City, sole selling agents for Eastern Corp. woodpulps (Bangor, Me.), announces to the trade the commercial production of "Purocell."

Purocell is a bleached cellulose fiber produced by Eastern Corp., highly purified to bring out the exceptional qualities of brightness, cleanliness, strength and workability that make it especially suitable for high grade writing, bond, ledger and other papers.